

CRPL-F140 PART A

FOR OFFICIAL USE

National Bureau of Standards
Library, N.W. Bldg

MAY 3 1956

Copy 1
Reference book not to be
taken from the Library.

PART A
IONOSPHERIC DATA

ISSUED
APRIL 1956

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

IONOSPHERIC DATA

CONTENTS

	<u>Page</u>
Symbols, Terminology, Conventions	2
Predicted and Observed Sunspot Numbers.	5
World-Wide Sources of Ionospheric Data.	5
Hourly Ionospheric Data at Washington, D. C.. .	8, 9, 19, 30
Tables of Ionospheric Data.	9
Graphs of Ionospheric Data.	30
Index of Tables and Graphs of Ionospheric Data in CRPL-F140 (Part A).	60

SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

Beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given in Document No. 626-E referred to above, plus an additional symbol, R: "Scaling of characteristic is influenced or prevented by absorption in the neighborhood of the critical frequency," (May 1955). Also, beginning with January 1956, additional meanings are assigned to T: A smoothed value which better fits the observations, replacing a doubtful or clearly inconsistent observed value; and to U: f_oF2 minus f_oF1 is 0.5 Mc or less (used with (M3000)F2).

a. For all ionospheric characteristics:

Values missing because of A, C, F, L, M, N, Q, R, S, or T are omitted from the median count.

b. For critical frequencies and virtual heights:

Values of f_oF2 (and f_oE near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of $h'F2$ (and $h'E$ near sunrise and sunset) missing for this reason are counted usually as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

Values missing because of G are counted:

1. For f_oF2 , as equal to or less than f_oF1 .
2. For $h'F2$, as equal to or greater than the median.

The symbol W is included in the median count only when it replaces a height characteristic; the symbol D, only when it replaces a frequency characteristic.

Values missing for any other reason are omitted from the median count.

c. For MUF factor (M-factors):

Values missing because of G or W are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because of E or G (and B when applied to the daytime E region only) are counted as equal to or less than the median foE, or equal to or less than the lower frequency limit of the recorder.

At night B for fEs is counted on the low side when there is a numerical value of foF2; otherwise it is omitted from the median count.

Values of fEs missing for any other reason, and values of h'Es missing for any reason at all are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D. C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If only four values or less are available, the data are considered insufficient and no median value is computed.

2. For the F2 layer, if only five to nine values are available, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as there are at least five values, the median is not considered doubtful.

3. For all layers, if more than half of the values used to compute the median are doubtful (either doubtful or interpolated), the median is considered doubtful.

The same conventions are used by the CRPL in computing the medians from tabulations of daily and hourly data for stations other than Washington, beginning with the tables in IRPL-F18.

The tables and graphs of ionospheric data are correct for the values reported to the CRPL, but, because of variations in practice

in the interpretation of records and scaling and manner of reporting of values, may at times give an erroneous conception of typical ionospheric characteristics at the station. Some of the errors are due to:

- a. Differences in scaling records when spread echoes are present.
- b. Omission of values when f_oF_2 is less than or equal to f_oF_1 , leading to erroneously high values of monthly averages or median values.
- c. Omission of values when critical frequencies are less than the lower frequency limit of the recorder, also leading to erroneously high values of monthly average or median values.

These effects were discussed on pages 6 and 7 of the previous F-series report IRPL-F5.

Ordinarily, a blank space in the fEs column of a table is the result of the fact that a majority of the readings for the month are below the lower limit of the recorder or less than the corresponding values of f_oE . Blank spaces at the beginning and end of columns of $h'F_1$, f_oF_1 , $h'E$, and f_oE are usually the result of diurnal variation in these characteristics. Complete absence of medians of $h'F_1$ and f_oF_1 is usually the result of seasonal effects.

The dashed-line prediction curves of the graphs of ionospheric data are obtained from the predicted zero-muf contour charts of the CRPL-D series publications. The following points are worthy of note:

- a. Predictions for individual stations used to construct the charts may be more accurate than the values read from the charts since some smoothing of the contours is necessary to allow for the longitude effect within a zone. Thus, inasmuch as the predicted contours are for the center of each zone, part of the discrepancy between the predicted and observed values as given in the F series may be caused by the fact that the station is not centrally located within the zone.
- b. The final presentation of the predictions is dependent upon the latest available ionospheric and radio propagation data, as well as upon predicted sunspot number.
- c. There is no indication on the graphs of the relative reliability of the data; it is necessary to consult the tables for such information.

PREDICTED AND OBSERVED SUNSPOT NUMBERS

The following predicted smoothed 12-month running-average Zürich sunspot numbers were used in constructing the contour charts:

Month	Predicted Sunspot Number										
	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946
December		42	11	15	33	53	86	108	114	126	85
November		35	10	16	38	52	87	112	115	124	83
October		31	10	17	43	52	90	114	116	119	81
September	119	30	8	18	46	54	91	115	117	121	79
August	105	27	8	18	49	57	96	111	123	122	77
July	95	22	8	20	51	60	101	108	125	116	73
June	89	18	9	21	52	63	103	108	129	112	67
May	77	16	10	22	52	68	102	108	130	109	67
April	68	13	10	24	52	74	101	109	133	107	62
March	60	14	11	27	52	78	103	111	133	105	51
February	53	14	12	29	51	82	103	113	133	90	46
January	48	12	14	30	53	85	105	112	130	88	42

The latest available information follows concerning the corresponding observed Zürich numbers (some of which may be subject to minor change) beginning with the minimum of April 1954.

Observed Sunspot Number

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1954				3	4	4	5	7	8	8	9	12
1955	14	16	19	23	29	35	40	46	55			

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 60 and figures 1 to 120 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

Republica Argentina, Ministerio de Marina:
Buenos Aires, Argentina

Commonwealth of Australia, Ionospheric Prediction Service of the
Commonwealth Observatory:
Brisbane, Australia
Canberra, Australia
Hobart, Tasmania
Townsville, Australia

University of Graz:
Graz, Austria

Meteorological Service of the Belgian Congo and Ruanda-Urundi:
Elisabethville, Belgian Congo
Leopoldville, Belgian Congo

Defence Research Board, Canada:
Baker Lake, Canada
Churchill, Canada
Ottawa, Canada
Resolute Bay, Canada
Winnipeg, Canada

Radio Wave Research Laboratories, National Taiwan University,
Taipeh, Formosa, China:
Formosa, China

Institute for Ionospheric Research, Lindau Uber Northeim, Hannover,
Germany:
Lindau/Harz, Germany

The Royal Netherlands Meteorological Institute:
De Bilt, Holland

Icelandic Post and Telegraph Administration:
Reykjavik, Iceland

Norwegian Defence Research Establishment, Kjeller per Lillestrom,
Norway:
Oslo, Norway
Tromso, Norway

South African Council for Scientific and Industrial Research:
Capetown, Union of South Africa
Johannesburg, Union of South Africa

Research Institute of National Defence, Stockholm, Sweden:
Upsala, Sweden

Post, Telephone and Telegraph Administration, Berne, Switzerland:

Schwarzenburg, Switzerland

United States Army Signal Corps:

Adak, Alaska

Ft. Monmouth, New Jersey

Okinawa I.

White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation Laboratory):

Fairbanks, Alaska (Geophysical Institute of the University of Alaska)

Guam I.

Huancayo, Peru (Instituto Geofisico de Huancayo)

Maui, Hawaii

Narsarssuak, Greenland

Panama Canal Zone

Puerto Rico, W. I.

San Francisco, California (Stanford University)

Talara, Peru (Instituto Geofisico de Huancayo)

Washington, D. C.

HOURLY IONOSPHERIC DATA AT WASHINGTON, D. C.

The data given in tables 61 through 71 follow the scaling practices given in the report IRPL-C61, "Report of International Radio Propagation Conference," pages 36 to 39, and the median values are determined by the conventions given above under "Symbols, Terminology, Conventions." Beginning with September 1949, the data are taken at Ft. Belvoir, Virginia.

The interpretation of a cell is as follows: U F
32

The U is a weight meaning doubtful. Other weights are I, interpolated, D, greater than, and E, less than. Absence of a letter in the upper left position means full weight is given to the observation.

Symbols such as F above are given in the upper right position.

There should be no difficulty in the placing of the decimal point. For the time being, a final zero will be found in each value of foF1 and foE. Thus at a later date it will be possible to register more closely scaled values of these characteristics, whenever such are reported.

TABLES OF IONOSPHERIC DATA

9

Table 1

Washington, D. C. (38.7°N, 77.1°W)

March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	6.0					(2.6)	2.85
01	270	5.6						2.80
02	270	5.5						2.80
03	270	5.0						2.80
04	270	4.6						2.75
05	280	4.2						2.80
06	260	4.5					(1.8)	2.90
07	240	6.6	255	---	115	2.2		3.20
08	240	8.0	230	---	109	2.7	2.5	3.20
09	250	9.0	220	---	109	3.1	3.0	3.20
10	250	9.8	215	---	107	3.3		3.00
11	270	10.5	210	5.0	105	3.5		3.00
12	270	11.0	210	4.9	105	3.6		2.90
13	280	11.0	220	4.6	103	3.6		2.90
14	270	10.7	220	4.8	107	3.5		2.90
15	270	10.8	220	4.6	109	3.3		2.90
16	250	10.6	230	---	<111	3.1		2.90
17	240	10.0	240	---	115	2.6		3.00
18	240	9.7			129	1.8		3.00
19	230	8.7						3.00
20	240	7.7						2.95
21	250	7.2					(1.6)	2.90
22	260	6.8						2.85
23	260	6.5					(2.1)	2.90

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 2

Tromsø, Norway (69.7°N, 19.0°E)

February 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---					3.7	----
01	---	---					<4.0	----
02	---	---	(4.2)				3.7	(2.70)
03	(290)	(4.0)					3.0	(2.70)
04	280	3.7					2.5	2.80
05	280	3.2					2.1	2.70
06	275	3.2					1.4	2.65
07	255	3.8					<1.9	2.90
08	250	5.1			---	---	1.8	3.05
09	245	6.3			---	---	<1.9	3.10
10	240	6.9			---	---	2.1	3.10
11	240	7.6	245	---	110	2.3		3.10
12	240	7.8	245	---	120	2.3		3.10
13	240	7.7	245	---	---	2.3		3.10
14	230	7.5	---	---	---	2.1		3.15
15	230	6.5			---	1.8	<2.3	3.20
16	230	6.2			---	---	2.4	3.10
17	230	4.9					2.0	3.00
18	250	3.8					2.2	3.00
19	(260)	(3.7)					3.7	(3.00)
20	---	---					4.0	----
21	---	---					4.0	----
22							3.5	
23							4.0	

Time: 15.0°E.

Sweep: 0.7 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 3

Fairbanks, Alaska (64.9°N, 147.8°W)

February 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		(2.2)					3.4	(2.95)
01		(2.4)					4.2	(2.85)
02		(2.2)					5.2	(2.80)
03		(2.7)					4.2	----
04		(2.6)					3.9	----
05		(3.2)					4.0	(2.80)
06		(3.1)					2.2	(2.95)
07		(3.0)			---	---		(2.95)
08		(4.2)			---	---		(3.20)
09		(5.6)			124	(2.2)		(3.30)
10		(6.5)			118	(2.4)		(3.35)
11		(7.2)			118	(2.6)		3.25
12		7.4			117	(2.6)		3.25
13		(7.8)			117	(2.6)		(3.20)
14		(8.4)			122	(2.5)		(3.20)
15		(8.2)			123	(2.2)		(3.30)
16		(7.8)			125	(1.8)		(3.30)
17		(7.0)			---	---		(3.20)
18		(5.3)						(3.30)
19		(4.2)						(3.25)
20		(3.0)						(3.20)
21		(3.3)						(3.20)
22		(2.8)					1.9	(3.05)
23		(2.6)					2.3	(3.00)

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 4

Narsarsuaq, Greenland (61.2°N, 45.4°W)

February 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		---					4.2	----
01		---					3.6	----
02		(4.0)					3.8	(2.80)
03		---					4.3	----
04		(3.3)					4.4	(2.85)
05		(3.0)					3.8	(2.90)
06		(2.8)					3.8	(3.00)
07		(3.0)					2.9	(3.05)
08		(4.7)					1.9	(3.20)
09		(6.2)			121	(2.3)		(3.30)
10		(7.0)			123	2.4		(3.20)
11		(7.2)			---	2.8		(3.20)
12		(7.8)			123	2.7		(3.15)
13		(7.8)			121	2.7		(3.10)
14		(8.0)			125	2.6		(3.10)
15		(7.8)			121	2.5		(3.15)
16		(7.8)			119	(2.2)		(3.10)
17		(7.2)					2.0	(3.15)
18		(5.2)					3.2	(3.00)
19		(4.4)					4.3	(2.90)
20		(4.0)					4.3	(2.95)
21		(3.6)					4.4	(2.90)
22		---					5.0	----
23		---					4.3	----

Time: 45.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 5

Oslo, Norway (60.0°N, 11.1°E)

February 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.8					<1.3	2.65
01	300	2.4					<1.3	2.60
02	300	2.2					<1.1	2.65
03	300	2.2					<1.0	2.70
04	300	2.1					<1.1	2.70
05	290	2.2					<1.3	2.75
06	270	2.2					<1.4	2.90
07	270	2.9					<1.6	2.90
08	240	4.8				1.7		3.15
09	235	6.6	---	---	120	2.2		3.30
10	235	7.5	240	---	115	2.4	2.8	3.20
11	240	8.1	240	---	115	2.7		3.20
12	240	8.4	235	---	115	2.8		3.30
13	240	8.4	230	---	115	2.8		3.20
14	240	8.6	240	---	120	2.8		3.20
15	240	8.7	245	---	120	2.5		3.20
16	230	7.9	245	---	---	2.2		3.30
17	220	7.5	---	---	---	---	<1.6	3.30
18	220	6.6					<1.5	3.15
19	220	5.0					<1.6	3.10
20	245	4.0					<1.4	2.90
21	(260)	3.3					<1.4	2.75
22	(265)	2.9					<1.5	2.75
23	(270)	2.8					<1.4	2.70

Time: 15.0°E.

Sweep: 0.7 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 6

Uppsala, Sweden (59.8°N, 17.6°E)

February 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	2.4					2.0	2.8
01	325	2.5					2.0	2.75
02	330	2.4					2.0	2.8
03	310	2.4					2.4	2.8
04	300	2.3					2.3	2.8
05	300	2.2					2.5	2.85
06	295	2.4			---	E	2.0	2.9
07	260	3.8			---	E		3.0
08	230	5.8			125	1.7	2.4	3.2
09	230	7.2	245	3.5	115	2.2	2.5	3.3
10	225	7.8	220	3.6	110	2.5	2.7	3.3
11	230	8.3	215	(3.7)	110	2.6	2.7	3.2
12	240	8.7	220	3.6	110	2.7	2.3	3.3
13	230	8.6	225	3.6	110	2.8		3.25
14	230	8.8	235	3.6	110	2.6		3.2
15	230	8.7	---	---	115	2.4	2.3	3.3
16	220	8.0			125	1.8	2.4	3.3
17	210	7.3			---	E	2.6	3.2
18	215	6.0			---	E		3.2
19	225	4.2						3.1
20	255	3.4						2.9
21	290	2.9						2.9
22	300	2.8						2.8
23	330	2.7						2.85

Time: 15.0°E.

Sweep: 1.4 Mc to 17.0 Mc in 6 minutes, automatic operation.

Table 7

Adak, Alaska (51.9°N, 176.6°W)							
February 1956							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	330	2.8					2.70
01	340	(2.8)					(2.65)
02	340	2.9					2.65
03	320	2.9					2.70
04	320	2.9					2.70
05	300	2.9					2.75
06	280	2.8					2.75
07	250	4.8					3.00
08	240	6.9			122	2.2	3.25
09	250	7.8	---	---	122	(2.7)	3.15
10	250	9.0	250	---	127	(3.0)	3.10
11	260	9.8	250	---	124	(3.0)	3.05
12	250	10.0	250	---	121	(2.9)	3.10
13	250	10.3	260	---	(121)	(2.8)	3.10
14	250	10.3	250	---	122	(2.7)	3.10
15	250	9.7	---	---	125	2.7	3.15
16	240	8.8			130	2.2	3.15
17	230	7.6					3.10
18	240	6.2					3.10
19	240	4.6					3.15
20	250	3.2					3.00
21	280	2.7					2.85
22	300	2.8					2.80
23	320	2.8					2.65

Time: 180.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 9

Ft. Monmouth, New Jersey (40.3°N, 74.1°W)							
February 1956							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	280	3.9					2.95
01	<280	3.8					2.90
02	270	4.2					2.90
03	270	3.9					2.90
04	260	3.8					3.00
05	250	3.6					3.00
06	250	3.1					3.00
07	240	5.1			---	<1.7	3.25
08	230	7.2	235	---	119	(2.6)	3.40
09	230	8.1	220	---	111	(3.0)	3.40
10	240	9.0	220	---	111	(3.2)	3.25
11	250	9.8	215	---	111	(3.5)	3.20
12	250	9.7	<220	4.5	111	(3.5)	3.10
13	250	9.8	220	---	111	(3.5)	3.10
14	250	10.0	220	---	111	(3.4)	3.10
15	240	9.0	220	---	115	(3.0)	3.10
16	240	9.6	230	---	114	(2.7)	3.15
17	230	9.2	---	---	123	(2.0)	3.15
18	220	8.4					3.15
19	230	7.3					3.10
20	230	6.0					3.15
21	240	5.3					3.05
22	250	5.1					3.00
23	260	4.5					3.00

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 11

Okinawa I. (26.3°N, 127.0°E)							
February 1956							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	260	6.7				1.8	2.90
01	260	6.7					2.95
02	250	5.8				2.2	3.00
03	240	4.9				2.1	3.10
04	230	4.0				2.2	3.25
05	240	3.0				2.2	3.00
06	280	3.1				2.2	2.90
07	270	5.0			---	2.1	3.10
08	230	7.9	---	---	115	2.5	3.40
09	240	9.6	230	---	111	(3.1)	3.30
10	270	11.0	230	---	109	3.4	3.20
11	270	12.0	220	---	109	3.7	3.15
12	200	12.6	220	---	109	(3.8)	3.10
13	300	13.2	220	---	107	(3.8)	2.90
14	290	14.6	220	---	107	(3.7)	2.95
15	200	14.6	220	---	109	(3.6)	2.95
16	270	14.3	230	---	117	>3.4	3.00
17	240	14.0	240	---	---	3.9	3.00
18	230	13.7			125	1.9	3.00
19	220	12.3				3.1	3.00
20	230	11.6				3.0	3.00
21	230	10.4				2.2	3.05
22	220	9.0				2.0	3.05
23	260	7.1					2.85

Time: 135.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 8

Graz, Austria (47.1°N, 15.5°E)							
February 1956							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	300	4.0					
01	300	4.4					
02	300	3.7					
03	320	3.9					
04	300	3.7					
05	290	3.6					
06	300	3.3					
07	250	5.0					
08	220	7.4					
09	210	8.6					
10	230	9.3					
11	230	9.9					
12	250	9.5					
13	230	9.4					
14	230	9.2					
15	240	9.1					
16	220	8.9					
17	210	8.0					
18	230	7.0					
19	250	6.2					
20	250	4.6					
21	275	3.6					
22	300	4.0					
23	325	3.8					

Time: 15.0°E.

Sweep: 2.5 Mc to 12.0 Mc in 2 minutes.

Table 10

White Sands, New Mexico (32.3°N, 106.5°W)							
February 1956							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	270	3.8					2.90
01	<270	3.7					2.85
02	260	4.0					2.95
03	250	4.0					3.05
04	240	3.6					2.95
05	<280	3.6					2.80
06	270	3.5					2.80
07	240	5.7			---	---	3.25
08	230	8.0	230	---	111	(2.6)	3.30
09	240	9.1	230	---	(109)	(3.1)	4.0
10	250	9.9	220	---	109	(3.3)	4.2
11	270	10.0	215	(4.9)	(111)	(3.5)	4.6
12	260	10.0	215	(4.8)	(113)	(3.6)	4.3
13	270	11.0	215	(4.8)	111	(3.6)	4.0
14	260	10.5	220	(4.7)	111	(3.5)	4.3
15	250	10.3	225	(4.3)	111	(3.3)	4.0
16	240	10.2	230	(3.8)	111	(2.9)	3.9
17	230	9.0	---	---	115	---	3.2
18	220	8.5					3.20
19	220	6.8					3.15
20	230	5.7				2.2	3.10
21	230	4.4					3.10
22	250	3.0					2.90
23	<270	4.1					2.90

Time: 105.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 12

Formosa, China (25.0°N, 121.5°E)							
February 1956							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	250	7.4				<1.7	3.1
01	240	5.2				<1.7	3.0
02	240	4.4				<1.7	3.1
03	(240)	(3.2)				(1.0)	(3.15)
04	(240)	(2.7)				(1.7)	(2.8)
05	(280)	(2.6)				(1.8)	(2.05)
06	(280)	(2.6)				<1.5	(2.9)
07	(240)	(5.8)			160	<1.9	(3.3)
08	250	8.5	---	---	120	2.8	3.3
09	260	10.5	240	---	120	3.2	3.2
10	260	12.0	240	(4.7)	120	3.4	<4.0
11	200	12.9	220	(4.7)	110	3.5	4.0
12	270	13.1	220	---	120	3.5	<4.8
13	(280)	15.0	220	---	120	3.5	4.3
14	280	15.7	220	4.7	120	3.5	4.2
15	280	>16.0	240	4.7	120	3.5	4.1
16	(270)	16.0	240	(4.5)	---	---	3.0
17	240	15.8			---	---	3.1
18	240	>14.3				<2.4	3.2
19	240	15.3				2.3	3.1
20	240	>14.0				2.3	3.1
21	240	11.2				<2.2	3.2
22	240	9.6				<1.7	3.1
23	240	7.0				<1.7	3.1

Time: 120.0°E.

Sweep: 1.1 Mc to 19.5 Mc in 15 minutes, manual operation.

Table 13

Maui, Hawaii (20.8°N, 156.5°W) February 1956								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	4.5						2.90
01	250	4.2						3.05
02	250	3.8						3.05
03	240	3.4						3.10
04	260	2.5						2.85
05	300	2.4					1.8	2.80
06	310	2.4						2.75
07	270	5.0			---	---		3.05
08	250	8.0	245	---	120	2.6	3.9	3.20
09	270	9.7	240	---	117	3.2	3.7	3.05
10	290	11.4	230	(4.9)	111	3.5	4.1	3.00
11	290	12.5	225	5.0	111	3.7	4.5	3.00
12	290	12.8	220	5.2	111	3.8	4.4	2.90
13	300	13.7	220	5.2	109	3.7	4.8	2.80
14	300	14.5	220	(5.3)	111	3.6	5.1	2.80
15	290	14.3	230	---	111	3.6	4.5	2.85
16	270	13.5	235	---	111	3.2	4.2	2.90
17	260	12.5	240	---	115	2.7	3.8	3.00
18	240	11.5			---	---		3.10
19	220	10.0					4.1	3.15
20	230	7.6					2.3	2.90
21	250	6.8					2.7	2.95
22	240	6.4					2.1	3.10
23	230	5.0					1.3	3.10

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 14

Puerto Rico, W. I. (18.5°N, 67.2°W) February 1956								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	5.4						2.90
01	270	5.0						3.00
02	270	4.9						3.10
03	250	4.5						3.10
04	270	4.1						3.00
05	280	3.6						2.80
06	290	3.8						2.85
07	250	5.4	---	---	---	<1.9		3.15
08	240	8.2	240	---	119	2.5		3.35
09	260	9.5	235	---	117	3.1		3.25
10	270	10.9	230	---	115	3.5		3.10
11	270	11.4	220	4.9	115	3.6		3.15
12	280	10.8	220	5.0	111	3.8		3.00
13	285	11.1	220	5.0	115	(3.7)	4.1	2.95
14	290	10.8	220	4.8	112	3.7	3.8	2.90
15	300	10.5	230	4.9	115	3.5	3.7	2.90
16	290	9.7	230	---	119	3.3	3.6	2.90
17	260	9.8	250	---	119	2.9	3.4	3.00
18	250	9.6					2.0	3.00
19	235	9.2						3.10
20	230	7.8					2.0	3.05
21	250	6.2						2.95
22	270	5.9						2.90
23	260	5.7						2.95

Time: 60.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 15

Guam I. (13.6°N, 144.9°E) February 1956								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	220	8.7					2.6	3.2
01	220	8.5					2.1	3.3
02	220	7.6					1.6	3.3
03	230	5.8					1.2	3.2
04	240	5.0					1.9	3.2
05	240	4.6					1.8	3.2
06	240	3.6					1.9	3.25
07	250	6.2					2.5	3.2
08	240	9.3	240	---	115	2.8	3.2	3.3
09	---	11.0	225	---	111	3.2	3.8	3.2
10	(280)	12.0	220	---	111	3.5	4.0	2.9
11	(290)	11.7	210	---	111	3.6	3.6	2.6
12	(280)	10.4	200	5.0	112	3.6		2.5
13	---	10.7	200	---	112	3.6		2.4
14	---	10.5	200	---	113	3.6	3.8	2.4
15	---	10.8	<210	---	111	3.4	3.8	2.4
16	---	10.9	220	---	111	3.1	3.9	2.5
17	---	11.5	240	---	115	2.8	3.3	2.7
18	260	12.0			---	---	2.8	2.75
19	300	11.7					2.1	2.7
20	300	11.0						2.65
21	250	10.4					2.0	2.8
22	240	10.3					2.9	3.0
23	230	9.0					3.5	3.2

Time: 150.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 16

Panama Canal Zone (9.4°N, 79.9°W) February 1956								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	230	7.1						3.25
01	230	4.3						3.30
02	240	3.6						3.10
03	250	3.2						3.00
04	270	3.0					1.9	2.90
05	280	2.8					2.3	2.90
06	290	3.0					2.6	2.90
07	260	6.6					3.0	3.20
08	260	9.0	240	---	117	(2.9)	3.5	3.20
09	270	11.0	230	---	115	(3.3)	3.4	3.10
10	280	11.9	215	5.0	114	3.6	4.2	3.05
11	290	11.8	210	5.2	113	(3.9)	4.0	2.95
12	300	12.0	205	5.4	111	(4.0)	4.2	2.90
13	310	12.2	210	(5.3)	111	(3.9)	4.2	2.80
14	320	12.3	220	(5.4)	110	(3.7)	4.2	2.80
15	320	12.1	230	5.3	113	3.6	4.7	2.80
16	300	12.1	240	---	110	3.2	4.6	2.90
17	270	11.8	245	---	116	2.9	3.8	2.95
18	240	11.0					3.4	3.00
19	240	(10.4)					3.3	(3.10)
20	230	(9.8)					2.9	3.05
21	230	(8.7)					2.1	(3.00)
22	240	(7.4)						3.00
23	240	7.8						3.00

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 17

Resolute Bay, Canada (74.7°N, 94.9°W) January 1956								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.2						3.1
01	240	3.1						3.0
02	250	3.0						3.0
03	260	2.9						3.0
04	240	2.9					<1.2	2.9
05	250	2.9					4.0	3.0
06	270	3.0			---	---	4.0	2.95
07	270	2.9			---	---	4.0	(3.0)
08	270	3.1			---	---	2.0	3.0
09	240	3.8			---	---		2.9
10	250	3.8			---	---		3.0
11	250	4.1			120	1.3	2.5	3.0
12	250	4.2			120	1.4		3.15
13	240	4.9			110	1.2		3.0
14	240	5.0			110	1.2		3.1
15	230	5.1			---	1.1		3.0
16	240	4.3						3.0
17	240	4.3						3.1
18	250	4.0					1.4	3.0
19	240	4.0					2.0	(3.05)
20	250	4.0					3.0	(3.0)
21	250	3.8					4.0	(3.0)
22	250	3.2						3.0
23	240	3.4						3.0

Time: 90.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 18

Baker Lake, Canada (64.3°N, 96.0°W) January 1956								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.2			110	1.3	5.3	2.95
01	280	2.9			115	1.3	6.0	2.9
02	280	2.9			120	1.1	6.0	2.9
03	280	2.6			130	1.0	4.8	2.8
04	300	2.7			<130	1.2	4.2	2.9
05	300	2.6			120	1.3	4.4	3.0
06	280	2.7			125	1.5	4.7	3.0
07	300	3.2			110	1.6	5.0	2.9
08	300	3.1			115	2.0	5.1	2.9
09	290	3.7			115	2.1	5.0	3.0
10	270	4.6			105	2.3	4.0	3.0
11	280	5.0	270	---	110	2.4	4.5	3.05
12	270	5.2	260	---	110	2.7	3.0	3.1
13	260	6.9	280	---	110	2.4	3.3	3.0
14	260	7.0	---	---	110	2.4	4.0	3.1
15	260	5.9	---	---	110	2.0	3.4	3.1
16	260	4.8			110	1.9	4.0	3.0
17	270	4.2			120	2.2	5.4	3.05
18	270	4.1			115	1.9	6.0	3.0
19	260	3.9			120	1.6	5.0	2.9
20	270	3.9			125	1.4	5.0	3.0
21	260	3.5			120	1.3	5.0	2.9
22	260	3.3			120	1.0	7.0	3.0
23	270	3.2			110	1.2	6.3	3.0

Time: 90.0°W.

Sweep: 0.6 Mc to 15.0 Mc in 16 seconds.

Table 19

Reykjavik, Iceland (64.1°N, 21.8°W)							
January 1956							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00							5.0
01							4.2
02							4.4
03							4.2
04							3.8
05	(2.5)						3.6
06	(3.0)						(3.10)
07	(2.6)						(2.80)
08	(2.4)						(3.00)
09	(3.5)						(3.10)
10	5.0						3.30
11	6.0						3.30
12	6.5						3.30
13	6.9						3.35
14	(6.4)						(3.25)
15	(5.8)						(3.35)
16	(4.5)						(3.20)
17	(3.8)					2.5	(3.25)
18						3.8	----
19						4.3	----
20						4.0	----
21						4.1	----
22						5.0	----
23						5.8	----

Time: 15.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 21

Oe Bilt, Holland (52.1°N, 5.2°E)							
January 1956							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	300	(2.8)					2.3
01	300	2.8					2.3
02	305	(2.5)					2.3
03	300	(2.2)					2.3
04	300	(2.2)					2.2
05	270	(2.3)					2.5
06	270	(2.2)					2.7
07	250	3.0					2.8
08	220	5.4			130	1.9	3.2
09	220	6.8	----	----	130	2.2	3.3
10	220	7.4	230	3.4	120	2.5	3.3
11	230	8.0	210	3.6	120	2.6	3.3
12	225	8.0	220	3.6	120	2.7	3.3
13	230	8.0	220	3.4	120	2.7	3.3
14	225	7.6	230	3.4	120	2.4	3.3
15	220	7.0			130	2.1	3.3
16	220	6.7			----	----	3.2
17	220	5.6					3.2
18	220	4.3					3.1
19	255	3.5					2.7
20	200	3.0					2.6
21	290	2.8					2.5
22	300	2.8					2.45
23	300	(2.9)					2.3

Time: 0.0°.

Sweep: 0.8 Mc to 20.0 Mc in 20 seconds.

Table 23

Schwarzenburg, Switzerland (46.0°N, 7.3°E)							
January 1956							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	290	3.4					3.2
01	280	3.3					3.2
02	300	3.2					3.2
03	300	3.1					3.2
04	290	3.0					3.2
05	280	2.6					3.3
06	250	2.6					3.4
07	260	2.6					3.4
08	200	4.6					3.7
09	200	6.9			100	2.1	3.8
10	200	8.5			100	2.5	3.8
11	200	8.6			100	2.7	3.8
12	200	8.8			100	2.9	3.8
13	200	8.5			100	2.9	3.7
14	200	8.5			100	2.8	3.7
15	200	8.4			100	2.6	3.8
16	200	7.5			100	2.4	3.7
17	200	7.0			100	2.0	3.8
18	200	6.0					3.7
19	200	4.6					3.7
20	210	3.8					3.5
21	270	3.5					3.3
22	295	3.2					3.1
23	300	3.2					3.1

Time: 15.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 20

Churchill, Canada (58.8°N, 94.2°W)							
January 1956							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	300	(3.4)			120	2.8	5.8
01	320	3.5			120	2.6	5.0
02	310	(3.5)			125	2.8	5.0
03	300	3.3			125	2.0	5.0
04	300	3.6			125	2.5	4.5
05	320	(3.5)			120	2.5	5.0
06	340	3.9	----	----	120	3.0	5.0
07	330	3.5	----	----	115	3.0	5.0
08	320	3.6	----	----	110	2.8	5.0
09	290	4.9	----	----	120	2.9	5.0
10	270	6.1	----	----	120	2.9	<3.4
11	260	7.0	----	----	120	2.5	4.0
12	260	8.0	----	----	120	2.6	<3.0
13	260	8.8	----	----	120	2.6	3.3
14	250	9.1	----	----	130	2.4	3.3
15	250	9.0	----	----	130	2.4	3.3
16	250	8.0			130	2.0	3.4
17	260	5.8			130	2.3	2.8
18	290	4.8			130	2.3	4.3
19	300	4.4			115	2.7	4.5
20	300	4.2			120	2.8	5.0
21	300	4.0			120	3.0	5.0
22	300	3.8			120	2.9	5.5
23	300	3.6			----	----	6.0

Time: 90.0°W.

Sweep: 0.6 Mc to 15.0 Mc in 16 seconds.

Table 22

Winnipeg, Canada (49.9°N, 97.4°W)							
January 1956							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	310	2.6					<1.7
01	310	2.6					<1.7
02	300	2.6					3.0
03	320	2.6					<1.8
04	330	2.5					3.0
05	320	2.6					<2.0
06	310	2.2					<1.7
07	300	2.0					<1.7
08	270	3.6			----	----	<1.7
09	250	5.5			120	2.0	3.0
10	250	6.9	250	----	120	2.5	3.0
11	250	7.8	240	----	130	2.8	3.0
12	260	8.5	240	3.9	120	2.9	3.0
13	260	8.9	240	3.8	125	2.9	3.0
14	260	9.3	240	----	120	2.9	3.0
15	260	9.9	250	----	125	2.8	3.0
16	240	0.9			130	2.3	3.0
17	240	0.6					3.0
18	230	6.9					<1.7
19	240	5.5					<1.7
20	260	3.9					<1.7
21	280	3.1					<1.7
22	290	2.9					<1.7
23	300	2.6					2.8

Time: 90.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 24

Ottawa, Canada (45.4°N, 75.9°W)							
January 1956							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	300	2.8					<1.6
01	300	2.7					<1.6
02	300	2.6					<1.6
03	280	2.5					<1.6
04	280	2.5					<1.6
05	280	2.4					<1.6
06	280	2.2					<1.6
07	280	2.6					<1.6
08	230	5.2			135	2.0	3.4
09	230	7.0	230	----	120	2.4	3.4
10	240	8.4	230	4.0	120	2.9	3.4
11	250	9.1	230	4.0	110	3.0	3.3
12	250	9.3	230	4.1	115	3.0	3.2
13	250	9.0	230	4.0	110	3.1	3.2
14	250	9.5	230	4.0	115	2.9	3.2
15	240	9.5	240	3.6	115	2.7	3.2
16	230	9.0	240	----	120	2.2	3.2
17	230	8.4			----	1.7	3.2
18	230	7.0					<1.6
19	230	5.7					<1.6
20	250	4.3					<1.6
21	260	3.8					<1.6
22	280	3.2					<1.6
23	290	3.0					<1.6

Time: 75.0°W.

Sweep: 1.0 Mc to 15.0 Mc in 15 seconds.

Table 25

Leopoldville, Belgian Congo (4.4°S, 15.2°E)

January 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	7.0						2.7
01	245	6.2						2.8
02	240	6.0						2.8
03	250	5.0					1.5	2.75
04	270	4.1						2.7
05	265	4.6	---	---	140	1.8	2.3	2.8
06	255	6.9	240	---	115	2.5	3.1	2.8
07	295	8.0	230	---	110	3.2		2.6
08	325	8.9	220	5.2	110	3.6		2.4
09	360	9.5	220	5.1	110	3.7		2.3
10	465	10.0	220	5.3	110	4.0		2.2
11	400	11.2	210	5.1	110	4.0		2.3
12	360	11.8	210	5.0	110	4.0		2.4
13	360	11.6	210	5.0	110	3.8		2.4
14	360	11.5	220	5.0	110	3.5		2.4
15	300	11.1	225	5.0	110	3.2		2.3
16	340	11.2	240	---	110	2.6	3.1	2.4
17	200	10.8	270	---	---	---	2.9	2.4
18	310	10.2					2.1	2.4
19	310	10.4					2.0	2.4
20	260	>11.0						2.6
21	230	>11.0						2.8
22	225	9.0						2.8
23	230	7.1						2.7

Time: 0.0°.

Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 27

Resolute Bay, Canada (74.7°N, 94.9°W)

December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.2					<1.0	3.0
01	250	3.2					2.2	3.0
02	250	3.2					<1.0	3.0
03	250	3.2					<1.5	3.1
04	260	2.9					4.0	3.0
05	260	3.0					4.0	3.0
06	260	3.1					3.8	3.1
07	260	3.1					3.5	3.0
08	260	3.2					3.8	3.0
09	250	4.0					2.0	2.9
10	230	4.5					<1.0	3.05
11	230	4.6					<1.0	3.0
12	230	5.0					<1.0	3.1
13	230	5.0					1.5	(3.05)
14	230	4.9					<1.0	3.0
15	230	5.0					<1.0	3.1
16	230	4.7					<1.0	(3.2)
17	240	4.6					<1.0	3.05
18	240	5.0					1.2	3.1
19	240	4.2					3.6	3.0
20	240	4.3					2.5	3.1
21	240	3.9					<1.9	(3.1)
22	250	3.7					<1.8	3.0
23	240	3.5					3.0	3.0

Time: 90.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 29

Reykjavik, Iceland (64.1°N, 21.8°W)

December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	<350	(3.0)					3.3	---
01	340	(2.8)					3.8	---
02	320	(3.2)					3.8	---
03	300	---					3.0	
04	300	(3.2)					<2.5	---
05	290	(3.2)					2.5	(2.9)
06	280	(3.2)					1.7	---
07	270	(3.1)					<1.5	(3.0)
08	280	2.6					<1.5	(2.95)
09	260	3.4					<1.6	3.05
10	230	5.2					3.3	3.3
11	230	6.2					3.3	3.3
12	230	7.2					3.3	3.3
13	220	7.2	---	---	---	---	3.3	3.3
14	220	7.2					3.3	3.3
15	220	(6.4)					<1.6	3.2
16	240	(4.9)					1.8	(3.2)
17	250	4.3					<1.7	3.2
18	260	(3.6)					2.9	(3.1)
19	290	(3.1)					2.8	(3.0)
20	(300)	(2.8)					3.2	---
21	(300)	(2.6)					3.8	---
22	---	---					3.6	
23	(340)	---					3.8	

Time: 15.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 26

Elisabethville, Belgian Congo (11.6°S, 27.5°E)

January 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	7.0					1.4	2.8
01	235	5.9						2.7
02	250	4.9					1.6	2.7
03	265	3.8					1.8	2.5
04	270	4.4	---	---	---	---	2.2	2.7
05	255	6.2	240	---	115	2.5	2.6	2.8
06	310	7.3	235	---	110	3.1	3.5	2.6
07	335	8.4	225	4.9	110	3.5	3.6	2.45
08	350	9.6	220	5.0	110	3.8	3.9	2.3
09	365	10.1	215	5.0	110	4.0		2.3
10	370	10.6	210	5.0	110	4.0		2.35
11	350	11.1	220	5.0	110	4.0	4.0	2.45
12	330	11.3	220	5.0	110	4.0		2.5
13	320	10.8	225	4.9	110	3.7	4.1	2.5
14	325	10.0	220	4.7	110	3.3	4.0	2.4
15	300	9.6	230	---	110	2.8	3.8	2.4
16	300	9.8	250	---	115	2.1	2.8	2.45
17	270	9.6					2.2	2.4
18	285	10.0					2.6	2.45
19	265	10.3					2.4	2.6
20	250	10.2					2.4	2.7
21	240	8.9					1.8	2.7
22	255	>8.0						2.6
23	250	7.4						2.6

Time: 0.0°.

Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 28

Baker Lake, Canada (64.3°N, 96.0°W)

December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.1			120	1.2	5.1	3.0
01	260	3.2			---	(1.0)	4.7	3.0
02	280	3.1			125	1.1	4.4	3.0
03	270	3.0			135	1.1	4.6	3.0
04	280	3.0			130	1.3	5.0	3.0
05	280	3.3			130	1.3	4.4	3.0
06	280	3.4			125	1.5	4.1	3.0
07	280	3.3			120	1.9	4.0	3.0
08	300	3.4			120	2.1	4.5	3.0
09	300	4.0			120	2.3	4.5	2.95
10	280	4.9			115	2.4	4.5	3.0
11	260	5.3			110	2.7	4.0	3.1
12	250	6.0			110	2.7	3.9	3.1
13	250	7.3			110	2.4	2.9	3.1
14	250	8.1			110	2.0	3.8	3.1
15	250	6.1			110	2.0	3.2	3.0
16	260	4.8			120	1.9	4.2	3.0
17	280	4.4			120	1.9	3.4	3.0
18	280	4.2			125	2.0	4.0	3.0
19	270	4.0			125	1.8	4.3	3.05
20	260	3.9			125	1.8	5.0	3.0
21	270	3.5			130	1.5	7.0	3.0
22	270	3.3			120	1.2	6.0	2.9
23	270	3.0			140	1.1	6.0	3.0

Time: 90.0°W.

Sweep: 0.6 Mc to 15.0 Mc in 16 seconds.

Table 30

Churchill, Canada (58.0°N, 94.2°W)

December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	(3.5)			120	3.5	6.0	---
01	300	(3.4)			125	(2.4)	6.0	---
02	290	3.5			130	2.8	4.8	---
03	300	3.5			120	2.2	4.2	(3.0)
04	320	3.8			120	2.8	4.3	(3.0)
05	320	3.8			110	2.8	4.7	3.2
06	300	4.0			125	2.6	4.6	3.2
07	300	3.8			120	3.0	4.3	3.2
08	300	3.6			110	2.6	4.3	3.2
09	260	5.0			110	2.2	3.3	3.3
10	250	6.9			120	2.2	<3.5	3.4
11	240	8.0			120	2.3	<2.4	3.3
12	250	8.4	---	---	120	2.5	<3.0	3.3
13	250	9.0	---	---	120	2.8		3.3
14	250	10.0			120	2.4		3.3
15	240	9.0			120	2.2		3.3
16	240	8.0			130	2.0	2.0	3.3
17	260	6.5			130	2.0	<2.2	3.3
18	260	5.1			130	2.0	2.8	3.3
19	280	4.5			130	2.6		3.1
20	300	4.0			120	2.5	4.0	3.05
21	300	4.0			130	2.7	4.7	3.0
22	290	3.8			125	2.7	6.0	(3.0)
23	300	3.5			120	2.7	6.0	3.2

Time: 90.0°W.

Sweep: 0.6 Mc to 15.0 Mc in 16 seconds.

Table 31

Lindau/Harz, Germany (51.6°N, 10.1°E)

December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.0					2.4	2.9
01	290	3.2					2.4	2.9
02	290	3.2					2.6	2.9
03	270	3.2					2.4	3.0
04	265	2.8					2.4	3.0
05	250	2.6					2.4	3.1
06	240	2.6					2.2	3.3
07	250	2.4					2.4	3.2
08	225	4.4					2.4	3.4
09	210	6.6			130	1.9	3.2	3.5
10	220	8.0			110	2.3	3.5	3.5
11	220	8.4			105	2.6	3.8	3.5
12	220	8.6			105	2.6	3.9	3.5
13	220	8.4			110	2.6	3.9	3.5
14	225	8.4			110	2.4	3.9	3.5
15	220	8.0			115	2.1	3.8	3.5
16	215	7.0					3.2	3.5
17	210	6.0					2.8	3.4
18	215	4.8					2.8	3.4
19	230	3.6					2.9	3.2
20	235	3.0					2.4	3.3
21	260	2.6					2.6	3.0
22	300	2.7					2.6	2.9
23	300	2.8					2.4	2.9

Time: 15.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 33

Uttawa, Canada (45.4°N, 75.9°W)

December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	2.9					<1.7	2.9
01	290	2.8					<1.6	2.9
02	300	3.0					<1.6	2.85
03	290	3.0					<1.6	2.9
04	270	3.0					<1.6	3.0
05	270	3.0					<1.6	3.0
06	270	2.8					<1.6	3.0
07	260	3.0					<1.6	3.0
08	230	6.0			140	2.1		3.3
09	230	7.5			120	2.5		3.4
10	240	8.8	230		115	2.9		3.4
11	250	9.4	230	4.0	110	3.0		3.3
12	240	9.5	230	4.0	115	3.0		3.3
13	240	9.4	230	4.0	120	3.0		3.2
14	240	9.3	230		120	2.8		3.3
15	240	9.2	240		120	2.5		3.3
16	220	9.0			115	2.0		3.3
17	220	7.2					<1.6	3.3
18	230	6.7					<1.6	3.1
19	240	5.2					<1.6	3.2
20	240	4.4					<1.7	3.1
21	260	3.5					<1.6	3.0
22	290	3.0					<1.6	2.9
23	290	3.0					<1.6	2.9

Time: 75.0°W.

Sweep: 1.0 Mc to 15.0 Mc in 15 seconds.

Table 35

Leopoldville, Belgian Congo (4.4°S, 15.2°E)

December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M2000)F2
00	250	8.4						2.2
01	250	0.0						2.3
02	230	7.1						2.35
03	225	6.0						2.4
04	230	4.9						2.5
05	250	6.0			130	2.0	2.5	2.5
06	255	7.1	230		110	2.6	3.1	2.4
07	300	8.2	220		110	3.2		2.2
08	315	9.0	210	4.9	110	3.5	3.5	2.0
09	370	9.9	205	5.0	105	3.6		1.9
10	485	10.1	210	5.0	110	3.7	4.0	1.8
11	480	10.9	215	5.3	110	3.6	4.1	1.8
12	440	11.4	205	5.1	110	3.7		1.9
13	395	12.1	220	5.0	110	3.6		2.0
14	390	12.0	230	5.0	110	3.4	3.5	1.9
15	400	12.2	220		115	3.1	3.6	1.9
16	355	12.5	240		120	2.5	3.3	2.0
17	200	11.7					3.1	2.1
18	295	11.1					3.0	2.0
19	310	11.4					2.5	<2.1
20	270	13.4					2.7	2.2
21	230	>13.0						2.5
22	215	10.3						2.4
23	225	0.9						2.2

Time: 0.0°.

Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 32

Winnipeg, Canada (49.9°N, 97.4°W)

December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	2.3					<1.7	2.9
01	310	2.3					<1.7	2.8
02	310	2.4					<1.7	2.8
03	310	2.3					<1.7	2.8
04	300	2.3					<1.7	2.8
05	310	2.3					<1.7	2.8
06	300	2.2					<1.7	2.9
07	300	2.2					<1.7	2.9
08	270	3.8					1.7	3.0
09	240	5.8			130	2.0		3.15
10	240	7.3	250		120	2.5		3.2
11	250	8.7	240		130	2.8		3.2
12	250	9.0	240		120	2.8		3.1
13	250	9.3	240		120	2.8		3.05
14	250	9.8	240		120	2.7		3.1
15	240	9.8	250		120	2.4		3.1
16	230	8.8			130	2.0		3.1
17	230	7.6					<1.7	3.05
18	230	6.3					<1.7	3.0
19	240	5.0					<1.7	3.0
20	240	3.9					<1.7	3.0
21	260	2.9					<1.7	3.0
22	290	2.4					<1.7	2.9
23	300	2.3					<1.7	2.9

Time: 90.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 34

White Sands, New Mexico (32.3°N, 106.5°W)

December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.0					2.2	2.8
01	280	3.2					1.8	2.9
02	270	3.4					<1.7	2.9
03	270	3.4					<1.7	3.0
04	260	3.4					<1.6	3.0
05	270	3.2					<1.7	2.8
06	280	3.1					<1.7	2.9
07	250	5.0					2.2	3.1
08	240	7.8			120	(2.3)	4.2	3.4
09	240	8.8	230		120	2.9	4.8	3.3
10	240	9.4	220		110	(3.1)	5.2	3.3
11	240	9.4	220		110	(3.3)	5.2	3.2
12	260	10.2	210	(4.5)	110	3.4	5.4	3.2
13	250	9.8	220	(4.4)	120	(3.3)	4.8	3.1
14	250	9.6	230	(4.0)	110	3.2	4.5	3.2
15	240	9.0	220		120	2.9	4.7	3.2
16	230	8.8	210		120	2.4	3.4	3.25
17	230	8.0					2.8	3.3
18	220	5.9					2.8	3.3
19	230	4.6					2.8	3.3
20	250	3.2					2.4	3.3
21	250	3.0					2.8	3.2
22	270	3.0					2.7	3.0
23	270	2.9					3.1	3.0

Time: 105.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 36

Talara, Peru (4.6°S, 81.3°W)

December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	9.4					5.4	(3.2)
01	250	7.8					4.7	3.25
02	230	6.2					4.2	3.25
03	230	4.8					4.7	3.2
04	240	4.2					4.3	3.3
05	240	3.4					3.8	3.2
06	280	4.3			110		3.9	2.95
07	250	7.7	250		120	2.2	4.8	3.1
08		10.4	230		110	3.0	5.8	3.05
09	290	11.7	230		110	3.3	5.6	3.0
10	300	12.0	210	5.0	110	3.6	6.4	2.9
11	320	12.4	200	5.0	110	3.8	6.6	2.7
12	330	12.6	200	(5.0)	110	3.9	6.4	2.7
13	320	12.7	200	5.0	110	3.8	7.1	2.7
14	340	12.6	200	4.9	110	3.7	7.4	2.6
15	(350)	12.9	200	4.8	110	3.5	7.1	2.6
16		12.7	210		110	3.2	7.6	2.65
17	(240)	12.6	240		110	2.8	6.2	2.7
18	260	12.6					4.8	2.8
19	270	13.0					4.2	2.9
20	280	13.0					3.3	2.85
21	270	11.8					3.4	2.9
22	250	11.5					3.4	2.8
23	260	10.0					4.5	3.1

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 37

Elisabethville, Belgian Congo (11.6°S, 27.5°E)

December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M2000)F2
00	250	7.6						2.3
01	240	6.8						2.3
02	230	5.9						2.3
03	235	4.9						2.3
04	245	5.4	---	---	140	1.8	2.0	2.4
05	275	6.7	230	---	110	2.7		2.3
06	310	7.8	225	---	105	3.2		2.2
07	340	9.0	215	5.0	105	3.5		2.0
08	350	9.9	210	5.0	105	3.7		1.9
09	355	10.3	---	5.0	105	3.9		1.9
10	370	10.8	210	5.2	105	3.9		1.9
11	380	11.2	200	5.0	105	3.9		1.9
12	360	>11.6	---	5.0	105	3.8		2.0
13	340	11.6	225	4.8	105	3.6		2.0
14	320	11.3	230	4.6	105	3.3		2.0
15	310	11.1	230	---	110	2.7	3.2	2.0
16	280	11.0	255	---	---	2.0	3.0	2.0
17	265	10.8					2.6	2.0
18	275	11.0					2.3	2.1
19	260	10.8					1.9	2.1
20	255	10.9					2.0	2.2
21	245	10.5						2.3
22	235	9.1						2.2
23	240	8.2						2.2

Time: 0.0°.

Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 38

Huancayo, Peru (12.0°S, 75.3°W)

December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	400	---					<1.6	---
01	370	---					<1.6	---
02	320	(5.4)					<1.7	(3.1)
03	280	4.8					<1.6	(3.2)
04	240	4.3					<1.6	3.3
05	250	3.3					<1.5	3.1
06	260	6.6			130	1.9	4.6	3.0
07	(240)	9.1	240	---	110	2.7	9.0	2.9
08	---	10.7	220	---	110	3.2	11.7	2.8
09	(290)	11.5	210	4.8	110	3.6	11.8	2.6
10	300	11.7	210	5.0	110	3.8	12.4	2.4
11	320	12.0	210	5.1	110	---	12.7	2.3
12	320	12.0	200	5.1	110	---	12.7	2.3
13	310	12.0	200	5.0	110	---	12.5	2.4
14	(320)	12.0	200	5.0	110	---	11.9	2.4
15	(300)	11.9	200	4.6	110	---	11.4	2.4
16	---	11.5	210	---	110	3.1	10.5	2.4
17	(240)	11.8	240	---	110	2.7	9.3	2.4
18	270	11.5			120	(2.0)	5.8	2.4
19	300	10.9					<1.6	2.4
20	350	10.0					<1.6	2.3
21	390	9.3					<1.7	2.25
22	400	(8.6)					<1.6	(2.5)
23	400	---					<1.7	---

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 39

Resolute Bay, Canada (74.7°N, 94.9°W)

November 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.2			---	---		3.1
01	250	3.4			---	---		3.05
02	240	3.2			---	---		3.0
03	250	3.1			---	---		3.0
04	260	3.0			---	---		(3.0)
05	270	3.1			---	---		3.1
06	250	3.2			---	---		3.0
07	250	3.4			---	---		3.1
08	240	4.0			---	---		(3.1)
09	240	4.3			---	---		3.1
10	240	5.0			100	1.5		3.2
11	240	5.0			100	1.6		3.1
12	230	5.8			100	1.7		3.25
13	230	5.3			100	1.6		3.2
14	220	5.3			100	1.4		3.2
15	240	5.0			---	---		3.2
16	230	4.6			---	---		3.3
17	230	4.7			---	---		3.2
18	240	4.1			---	---		(3.0)
19	250	4.2						3.0
20	240	3.7						3.0
21	240	3.7						3.1
22	250	3.4						3.05
23	240	3.2						3.1

Time: 90.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 40

Baker Lake, Canada (64.3°N, 96.0°W)

November 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.1			135	1.0	4.8	3.0
01	270	3.1			125	1.0	4.4	3.0
02	270	2.9			125	1.0	4.5	2.95
03	290	2.7			130	1.0	4.3	2.8
04	280	2.8			130	1.3	5.0	2.9
05	300	2.9			130	1.3	4.2	3.0
06	300	2.9			125	1.6	4.6	2.9
07	310	3.0			120	1.8	4.8	2.9
08	280	3.5			120	2.2	5.2	3.0
09	280	4.1	---	---	110	2.4	4.7	3.1
10	270	4.8	260	---	110	2.6	5.0	3.1
11	260	5.8	260	<3.0	110	2.6	3.2	3.1
12	260	6.4	260	<3.0	110	2.6	3.4	3.1
13	260	7.5	260	<3.0	110	2.4	2.6	3.1
14	250	7.2	260	---	110	2.1	4.6	3.1
15	250	6.2	---	---	110	2.1	4.8	3.0
16	260	5.0	---	---	115	1.8	4.6	3.0
17	260	4.4			120	2.0	5.0	3.0
18	290	4.0			120	2.0	5.0	3.0
19	260	4.2			125	1.8	5.2	3.0
20	260	3.9			120	1.4	7.4	3.0
21	260	3.4			120	1.1	7.0	3.0
22	260	3.1			110	1.1	6.1	3.0
23	270	3.0			110	1.1	5.8	3.0

Time: 90.0°W.

Sweep: 0.6 Mc to 15.0 Mc in 16 seconds.

Table 41

Churchill, Canada (58.8°N, 94.2°W)

November 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	(3.3)			---	---	6.6	(3.0)
01	300	3.4			---	---	5.3	(2.9)
02	300	(3.5)			125	2.6	4.5	(2.9)
03	320	(3.4)			130	2.5	4.0	(2.8)
04	300	3.7			125	2.6	4.0	2.95
05	340	3.8			120	2.9	4.5	(2.8)
06	340	(3.7)			120	2.5	4.4	(2.8)
07	350	3.8			120	2.8	4.2	2.8
08	300	4.5			120	3.2	4.3	3.2
09	270	5.4			120	2.9	3.5	3.2
10	260	6.5	---	---	120	2.8	3.8	3.2
11	260	7.0	250	---	120	2.6		3.3
12	250	7.8	240	---	120	2.7		3.2
13	250	8.2	260	---	120	2.6		3.25
14	250	8.9	---	---	130	2.5		3.2
15	240	8.4			130	2.2	2.4	3.2
16	240	7.9			125	2.0	3.0	3.25
17	250	7.0			130	2.1	3.0	3.1
18	280	5.0			120	2.4	3.0	3.0
19	300	4.4			125	2.6	3.4	3.05
20	300	3.9			120	2.7	3.6	2.8
21	290	4.0			115	3.0	4.6	3.0
22	300	3.8			125	2.5	5.0	(3.0)
23	280	3.4			---	---	6.0	(2.9)

Time: 90.0°W.

Sweep: 0.6 Mc to 15.0 Mc in 16 seconds.

Table 42

Lindau/Harz, Germany (51.6°N, 10.1°E)

November 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.2					1.9	2.9
01	285	3.2					1.9	2.9
02	275	3.2					2.2	2.9
03	275	3.1					2.0	2.9
04	260	2.8					2.2	3.0
05	260	2.4					1.9	3.1
06	245	2.4					2.4	3.2
07	230	3.4					1.9	3.2
08	215	5.6			---	1.5	2.6	3.5
09	220	7.4			110	2.2	2.8	3.6
10	220	8.3			100	2.5	3.0	3.5
11	220	8.6			105	2.6	3.4	3.5
12	230	9.0			100	2.8	3.6	3.5
13	225	8.6			100	2.6	>2.8	3.5
14	225	8.7			100	2.6	3.0	3.4
15	230	8.8			110	2.2	2.8	3.4
16	215	7.7			---	1.7	2.6	3.5
17	210	6.3					2.6	3.4
18	215	5.4					2.6	3.4
19	215	4.6					2.4	3.3
20	235	3.4					2.2	3.2
21	250	3.0					2.0	3.1
22	300	3.0					1.9	2.9
23	300	3.0					2.0	2.05

Time: 15.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 43

Winnipeg, Canada (49.9°N, 97.4°W)

November 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.6					<1.8	2.9
01	310	2.3					<1.7	2.8
02	310	2.4					<1.8	2.9
03	310	2.4					2.0	2.9
04	310	2.3					<1.8	2.9
05	310	2.2					<1.8	2.85
06	320	2.1					<1.7	2.9
07	300	2.8					<1.7	3.0
08	260	5.0			120	1.9		3.1
09	240	6.2	240	---	130	2.3		3.2
10	250	7.0	240	3.8	120	2.7		3.15
11	260	7.9	230	4.0	120	2.9		3.1
12	260	8.3	240	4.0	120	2.9		3.1
13	260	8.5	240	4.0	120	2.9		3.1
14	260	8.8	240	3.9	120	2.8		3.1
15	250	8.7	250	---	120	2.5		3.1
16	240	8.1			---	2.0		3.2
17	230	7.2					<1.8	3.1
18	230	6.2					<1.7	3.1
19	240	5.0					<1.7	3.0
20	250	3.8					<1.7	3.0
21	280	3.2					<1.7	3.0
22	290	2.9					<1.7	3.0
23	300	2.5					<1.8	3.0

Time: 90.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 44

Ottawa, Canada (45.4°N, 75.9°W)

November 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.0					<1.6	2.9
01	300	3.0					<1.7	3.0
02	290	2.8					<1.6	2.95
03	290	2.8					<1.6	3.0
04	280	2.7					<1.6	3.0
05	280	2.4					<1.6	3.0
06	290	2.3					<1.6	3.0
07	250	4.1					1.6	3.2
08	240	6.2	---	---	120	2.2		3.3
09	240	7.8	230	3.7	120	2.6		3.3
10	240	8.4	220	4.0	110	2.9		3.3
11	250	9.0	220	4.2	110	3.0		3.3
12	250	9.1	220	4.2	110	3.0		3.3
13	250	9.5	230	4.0	115	3.0		3.2
14	250	9.1	240	4.0	120	2.8		3.3
15	240	9.2	240	3.4	120	2.5		3.2
16	230	9.0			120	2.0		3.3
17	220	7.6					<1.7	3.3
18	230	6.4					<1.6	3.1
19	240	5.2					<1.6	3.2
20	250	4.2					<1.6	3.1
21	260	3.5					<1.6	3.0
22	280	3.4					<1.6	3.0
23	290	3.1					<1.6	3.0

Time: 75.0°W.

Sweep: 1.0 Mc to 15.0 Mc in 15 seconds.

Table 45

San Francisco, California (37.4°N, 122.2°W)

November 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	(3.2)					(3.1)	(2.9)
01	250	(3.4)					(3.2)	(3.0)
02	<260	(3.3)					(2.6)	(3.0)
03	(260)	(3.4)					(2.9)	(2.9)
04	<260	(3.4)					(2.6)	(3.0)
05	(260)	(3.4)					(2.6)	(2.85)
06	(260)	(3.4)					(2.4)	(2.9)
07	230	(5.6)	---	---	<120	(1.9)	(1.9)	(3.3)
08	230	(7.9)	220	---	(110)	(2.3)	(3.3)	(3.5)
09	230	(8.8)	210	(4.0)	(100)	(2.6)	(4.2)	(3.4)
10	230	9.0	200	(4.3)	(110)	(3.0)	(3.8)	3.4
11	240	9.2	200	(4.4)	(110)	(3.1)	(3.9)	3.2
12	240	9.7	210	(4.4)	(110)	(3.3)		3.2
13	240	(9.7)	210	(4.4)	(110)	3.2		(3.2)
14	240	9.5	220	---	(110)	(3.0)		3.3
15	230	9.0	220	(3.3)	(110)	(2.8)		3.3
16	220	8.5	---	---	(110)	(2.2)		3.4
17	200	7.0	---	---			(2.3)	3.4
18	200	(4.9)					(2.4)	(3.4)
19	220	(3.8)					(2.3)	(3.3)
20	230	3.1					(2.3)	3.3
21	(250)	(2.9)					2.1	(3.1)
22	250	(3.0)					<1.8	(3.0)
23	(250)	(3.2)					(2.4)	(3.0)

Time: 120.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 46

Talara, Peru (4.6°S, 81.3°W)

November 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(260)	(10.1)					5.6	(3.0)
01	(240)	(8.5)					5.3	(3.2)
02	230	(7.0)					5.7	(3.2)
03	230	5.3					5.1	3.2
04	240	4.6					3.8	3.2
05	230	3.9					4.8	3.2
06	270	5.2					3.8	3.0
07	240	8.4	---	---	120	(2.4)	4.4	3.1
08	---	10.8	230	---	110	(3.0)	5.2	3.05
09	(280)	11.9	210	---	110	3.4	5.1	3.0
10	(290)	(12.4)	200	---	110	3.6	5.5	2.8
11	(290)	12.8	200	---	110	3.7	5.8	2.7
12	(300)	12.6	200	(5.0)	110	3.8	6.5	2.6
13	(300)	(12.6)	200	---	110	3.8	5.4	(2.6)
14	(300)	(12.6)	200	---	100	3.6	5.6	(2.55)
15	---	(12.4)	200	---	100	3.4	6.1	(2.5)
16	---	(12.4)	220	---	110	(3.0)	7.2	(2.6)
17	---	(12.6)	240	---	110	(2.6)	7.1	(2.7)
18	260	(12.8)					5.2	(2.7)
19	270	(12.2)					4.8	(2.8)
20	300	(12.5)					4.2	(2.9)
21	270	(12.2)					3.2	(3.0)
22	260	(11.3)					2.5	(2.95)
23	270	(11.0)					4.3	(2.9)

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 47

Huancayo, Peru (12.0°S, 75.3°W)

November 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	350	---					<1.6	---
01	320	---					<1.5	---
02	290	(6.0)					<1.6	(3.15)
03	240	5.0					<1.5	3.3
04	240	4.2					<1.4	3.3
05	240	4.2					<1.4	3.1
06	250	7.2			120	2.0	3.2	3.1
07	---	9.5	230	---	110	2.7	7.2	3.1
08	---	10.8	210	---	110	3.2	11.3	2.9
09	(300)	11.8	210	5.0	110	---	11.8	2.7
10	290	12.0	200	5.0	110	---	12.6	2.5
11	310	12.1	200	5.0	110	---	12.8	2.4
12	310	12.4	200	5.0	110	---	12.4	2.4
13	290	12.0	200	4.9	110	---	12.2	2.45
14	290	12.0	200	4.8	110	---	12.0	2.4
15	---	12.1	200	---	110	---	11.4	2.4
16	---	12.0	210	---	110	---	10.6	2.35
17	250	11.6	240	---	110	---	8.6	2.4
18	270	11.0			---	---	<2.3	2.4
19	310	10.0					<1.5	2.4
20	350	9.0					<1.5	2.3
21	360	(9.3)					<1.5	(2.4)
22	400	---					<1.5	---
23	400	---					<1.6	---

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 48

Johannesburg, Union of S. Africa (26.2°S, 28.1°E)

November 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	<270	5.3						2.8
01	250	5.2						2.9
02	<250	4.8						2.9
03	<250	4.4						2.9
04	---	3.9						2.95
05	<260	4.1						3.0
06	240	6.0	240	3.3	120	2.1		3.2
07	260	7.0	220	4.1	110	2.8		3.0
08	290	7.9	210	4.6	110	3.2		2.9
09	310	9.1	210	5.0	110	3.4		2.8
10	320	9.6	200	5.1	110	3.6	3.8	2.8
11	320	10.2	210	5.2	110	3.7	4.0	2.8
12	330	10.6	210	5.2	110	3.8	3.9	2.8
13	320	10.7	210	5.1	110	3.7	4.0	2.8
14	320	10.8	210	5.0	110	3.6		2.8
15	310	10.6	220	4.9	110	3.4	3.6	2.8
16	300	10.6	220	4.6	110	3.1		2.9
17	270	10.2	220	4.0	110	2.7	3.2	2.9
18	250	10.0	240	3.0	120	2.1	2.5	3.0
19	230	9.3						3.0
20	<230	8.1						3.0
21	230	7.0						3.0
22	<250	6.0						2.9
23	<270	5.8						2.8

Time: 30.0°E.

Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 49

Capetown, Union of S. Africa (34.2°S, 18.3°E)							
November 1955							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	<270	4.6					2.0
01	270	4.5					1.6
02	<280	4.4					2.0
03	<270	4.3					2.8
04	260	4.3					1.8
05	260	4.0					2.9
06	250	5.4	260	---	130	1.8	2.2
07	270	6.7	240	3.8	120	2.5	3.1
08	300	7.8	230	4.5	110	3.0	3.6
09	310	9.0	220	4.8	110	3.3	3.9
10	320	9.4	220	5.0	110	3.5	4.0
11	330	10.0	210	5.2	110	3.6	4.0
12	330	10.2	210	5.1	110	3.7	4.0
13	340	10.6	210	5.1	110	3.7	4.0
14	320	10.7	220	5.1	110	3.6	2.8
15	320	10.4	220	4.9	110	3.6	2.8
16	300	10.2	220	4.7	110	3.3	3.6
17	280	10.0	220	4.5	110	3.0	2.9
18	260	9.8	240	3.7	110	2.6	2.9
19	240	9.0	240	---	130	1.9	2.4
20	230	8.2					1.9
21	220	6.9					2.0
22	240	5.8					1.8
23	250	5.0					1.9

Time: 30.0°E.

Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 51

Lindau/Harz, Germany (51.6°N, 10.1°E)							
October 1955							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	275	3.8					2.0
01	285	3.8					2.2
02	280	3.8					1.9
03	275	3.6					2.2
04	270	3.4					2.3
05	250	2.8					2.4
06	250	3.0	---	---		E	2.4
07	230	4.8	---	---	1.6	2.4	3.5
08	225	6.1	230	110	2.2	2.8	3.5
09	230	6.8	220	100	2.4	3.4	3.5
10	245	7.6	210	100	2.8	3.8	3.5
11	240	8.2	205	100	2.8	3.7	3.5
12	245	8.4	205	100	2.9	3.8	3.4
13	240	8.3	205	100	2.8	3.6	3.3
14	245	8.4	210	100	2.8	3.5	3.4
15	230	8.2	220	100	2.6	3.4	3.4
16	230	8.0	230	105	2.2	3.1	3.4
17	225	7.3	---	---	1.8	2.8	3.4
18	220	6.8	---	---		E	2.6
19	225	6.2					2.4
20	225	5.2					2.7
21	230	4.4					2.4
22	255	3.8					2.2
23	280	3.8					2.2

Time: 15.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 53

Brisbane, Australia (27.5°S, 153.0°E)							
September 1955							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	260	4.6					3.0
01	250	4.5					3.1
02	240	4.2					3.1
03	240	3.6					3.0
04	270	3.4					2.9
05	280	3.3					2.9
06	250	4.5					3.3
07	240	6.2	250	---	120	2.2	3.3
08	270	6.9	235	4.2	110	2.7	3.2
09	280	7.4	230	4.4	110	3.0	3.5
10	275	7.6	220	4.6	110	3.2	4.2
11	280	7.5	205	4.6	120	3.3	3.8
12	280	7.9	200	4.5	120	3.3	4.1
13	285	7.2	210	4.5	120	3.3	4.5
14	280	7.0	210	4.4	120	3.2	4.1
15	280	7.0	220	4.3	120	2.9	4.0
16	250	6.8	220	---	120	2.6	3.6
17	240	6.4			130	1.8	3.2
18	240	5.8					3.0
19	250	5.4					2.9
20	260	5.0					2.9
21	280	5.0					2.8
22	265	5.0					2.9
23	260	4.8					2.9

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 50

Buenos Aires, Argentina (34.5°S, 58.5°W)							
November 1955							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	300	8.6					2.8
01	290	8.5					2.9
02	280	8.0					2.9
03	270	7.7					2.9
04	260	7.4					3.0
05	230	7.5	---	---	100	2.0	2.5
06	230	7.8	210	---	100	2.6	3.1
07	250	8.2	220	---	100	3.0	3.7
08	270	8.2	210	---	100	3.3	4.0
09	300	9.0	210	---	---	---	3.7
10	310	9.8	210	---	---	---	3.6
11	350	11.0	200	---	---	---	2.8
12	320	11.6	200	---	---	---	2.95
13	300	12.3	210	---	---	---	3.0
14	300	13.0	200	---	---	---	3.0
15	280	12.8	210	---	---	---	3.5
16	270	11.5	220	---	---	---	4.0
17	260	11.0	(220)	---	---	---	3.8
18	240	10.2	---	---	---	---	3.0
19	270	9.6					3.2
20	280	9.1					3.0
21	300	8.8					3.5
22	310	8.8					3.6
23	310	8.7					2.5

Time: 60.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 52

Townsville, Australia (19.3°S, 146.7°E)							
September 1955							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	240	>5.0					2.0 (3.3)
01	235	>4.9					2.0 3.3
02	220	>4.0					2.0 3.35
03	240	3.0					1.8 3.15
04	270	3.0					2.0 3.0
05	280	3.2					2.1 3.0
06	260	3.4				E	2.2 3.15
07	250	6.0	240	---	110	2.0	3.4
08	260	7.8	230	4.1	100	2.7	3.4
09	280	8.2	220	4.5	100	3.1	3.8 (3.4)
10	260	>8.5	210	4.6	100	3.3	4.2 3.4
11	270	>8.5	200	4.7	100	3.4	4.0 3.4
12	275	>7.8	200	4.7	100	3.5	4.6 3.3
13	285	7.4	200	4.6	100	3.4	4.7 3.2
14	290	7.4	200	4.6	100	3.3	4.6 3.2
15	290	7.4	210	4.5	100	3.2	3.7 3.3
16	260	7.5	210	4.1	100	2.9	3.4
17	240	>6.5	225	3.4	110	2.5	3.4 3.3
18	240	>6.0			150	1.7	2.2 3.2
19	250	5.9					2.4 (3.0)
20	250	5.8					2.0 3.0
21	260	>5.2					2.0 (3.0)
22	270	(5.7)					2.0 ---
23	260	>5.0					1.8 ---

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 54

Canberra, Australia (35.3°S, 149.0°E)							
September 1955							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	---	4.0					3.0
01	---	4.0					3.1
02	---	3.8					3.1
03	---	3.6					3.1
04	---	3.2					3.1
05	---	3.0					3.0
06	245	3.4					3.2
07	240	5.0	---	---	---	2.0	3.4
08	260	5.8	230	(4.0)	110	2.6	3.4
09	280	6.1	220	4.3	110	3.0	3.2 3.3
10	280	6.6	210	4.4	110	3.2	3.3
11	290	7.0	210	4.6	110	3.3	3.4 3.3
12	280	7.5	200	4.5	100	3.3	3.4 3.35
13	275	7.4	200	4.4	110	3.3	3.3
14	270	7.0	210	4.3	110	3.2	3.35
15	270	6.5	210	4.3	110	3.0	3.3
16	250	6.5	210	(3.8)	110	2.6	3.4
17	240	6.0	230	---	---	2.1	3.3
18	230	5.8					3.3
19	---	5.3					(3.1)
20	---	(4.8)					(3.0)
21	---	(4.4)					(3.0)
22	---	(4.4)					(3.0)
23	---	4.3					3.0

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 55

Hobart, Tasmania (42.9°S, 147.3°E) September 1955							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	270	2.6					2.9
01	270	2.5					2.9
02	280	2.2					2.9
03	270	2.1					2.9
04	250	2.0					3.0
05	290	1.8					2.9
06	250	2.0			---	---	3.0
07	240	4.0			100	1.8	3.1
08	220	4.8			100	2.3	3.1
09	200	5.5	---	---	100	2.0	3.1
10	300	6.0	200	4.4	100	3.0	3.1
11	300	6.2	200	4.5	100	3.1	3.1
12	300	6.5	200	4.5	100	3.2	3.1
13	300	6.5	200	4.4	100	3.2	3.1
14	300	6.5	200	4.3	100	3.0	3.1
15	220	6.5	200	4.1	100	2.8	3.05
16	210	6.3			100	2.4	3.1
17	230	6.0			100	1.9	3.1
18	240	5.6			120	1.4	3.1
19	240	5.2					2.9
20	250	4.6					2.9
21	250	4.0					2.0
22	270	3.5					2.85
23	280	3.2					2.8

Time: 150.0°E.

Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 57

Brisbane, Australia (27.5°S, 153.0°E) August 1955							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	260	(3.7)					(3.1)
01	260	(3.6)					(3.1)
02	250	3.7					(3.1)
03	250	3.9					3.25
04	250	(3.5)					(3.3)
05	275	(3.0)					(3.1)
06	250	3.1					(3.1)
07	240	5.0			---	E	3.4
08	(260)	5.6	240	4.0	---	---	(3.7)
09	275	6.0	240	4.2	120	3.0	3.8
10	270	6.5	230	4.3	120	3.2	4.0
11	280	6.3	220	4.4	120	3.3	(4.1)
12	280	6.4	210	4.3	120	3.3	(4.3)
13	300	6.0	200	4.3	120	3.1	(4.0)
14	280	6.5	200	4.2	120	3.0	(4.0)
15	250	6.1	200	4.0	---	---	(3.8)
16	(240)	5.8	---	---	---	---	(4.0)
17	240	5.2					3.35
18	245	4.6					3.2
19	250	4.0					3.2
20	270	4.2					3.1
21	270	3.6					(3.1)
22	270	3.5					(3.0)
23	275	(3.5)					(3.1)

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 59

Hobart, Tasmania (42.9°S, 147.3°E) August 1955							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	200	2.0					3.0
01	205	2.0					2.9
02	290	2.0					2.9
03	200	2.0					3.0
04	270	2.0					3.0
05	250	2.0					3.0
06	200	2.0					3.0
07	250	3.0			---	E	3.1
08	220	4.5			100	1.9	3.1
09	200	4.8			100	2.4	3.2
10	200	5.5			100	2.7	3.2
11	200	5.7	---	---	100	2.9	3.1
12	200	5.9	200	4.1	100	3.0	3.1
13	200	6.0	---	---	100	3.0	3.1
14	205	6.0	---	---	100	2.8	3.2
15	200	5.8			100	2.5	3.2
16	215	5.7			100	2.0	3.2
17	220	5.5			120	1.3	3.1
18	220	4.5					3.0
19	250	4.0					3.0
20	250	3.4					3.0
21	250	3.0					3.0
22	270	2.3					3.0
23	280	2.0					3.0

Time: 150.0°E.

Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 56

Townsville, Australia (19.3°S, 146.7°E) August 1955							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	240	>3.0					2.1
01	230	>3.0					2.1
02	230	3.1					2.1
03	210	3.0					2.4
04	230	>2.8					2.1
05	250	2.4					2.1
06	270	>2.4			---	E	2.1
07	240	4.7	---	---	130	1.8	2.1
08	250	>5.9	230	3.9	100	2.5	3.5
09	265	6.6	210	4.2	100	2.9	3.5
10	265	7.1	215	4.4	100	3.2	3.5
11	260	6.8	210	4.4	100	3.3	3.5
12	275	6.8	200	4.5	100	3.4	3.5
13	280	6.4	200	4.5	100	3.3	3.4
14	270	6.4	200	4.4	100	3.2	3.5
15	275	6.0	200	4.2	100	3.1	3.4
16	260	>6.1	200	4.0	100	2.8	3.5
17	240	5.9	225	3.5	110	2.2	3.5
18	230	5.1			---	---	3.0
19	230	4.6					2.3
20	240	3.9					2.1
21	250	3.7					2.1
22	250	3.5					2.1
23	245	(3.4)					2.0

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 58

Canberra, Australia (35.3°S, 149.0°E) August 1955							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	---	3.1					3.1
01	---	3.2					3.1
02	---	3.4					3.05
03	---	3.5					3.2
04	---	3.4					3.2
05	---	3.1					3.25
06	---	2.9					3.15
07	230	4.2			---	---	3.5
08	230	5.0	230	---	110	2.3	3.5
09	250	5.5	220	(4.0)	110	2.7	3.5
10	270	5.7	210	4.2	110	3.0	3.4
11	270	6.0	210	4.3	110	3.1	3.5
12	280	6.3	200	4.3	110	3.2	3.4
13	275	6.0	210	4.3	110	3.1	3.3
14	270	6.4	200	4.2	100	3.1	3.5
15	250	6.0	200	4.0	100	2.8	3.5
16	240	5.9	210	(3.5)	100	2.5	3.6
17	220	5.1	210	(2.5)	---	(1.9)	3.4
18	---	4.8					3.25
19	---	4.4					3.2
20	---	3.9					3.2
21	---	3.4					3.1
22	---	3.2					3.1
23	---	(3.1)					3.1

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 60

Brisbane, Australia (27.5°S, 153.0°E) April 1955							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	(270)	3.8					2.8
01	280	4.0					3.4
02	260	4.0					2.3
03	250	4.0					2.8
04	230	3.7					3.4
05	240	2.6					3.2
06	250	3.5			---	E	3.35
07	240	5.4	---	---	---	---	3.5
08	---	6.0	230	---	---	---	3.4
09	265	6.3	225	4.2	---	---	(5.0)
10	(270)	7.2	---	4.3	---	---	(5.2)
11	250	7.4	---	4.3	---	---	(4.7)
12	(260)	6.8	---	4.3	---	---	(5.0)
13	(270)	(6.5)	---	4.2	---	---	(4.8)
14	(250)	(6.7)	---	---	---	---	(5.0)
15	(250)	>7.0	---	---	---	---	(4.8)
16	(240)	(7.0)	---	---	---	---	(3.9)
17	(225)	5.9	---	---	---	---	(3.4)
18	(230)	5.3			---	E	3.15
19	250	4.2					3.2
20	260	4.2					3.05
21	260	4.2					3.1
22	(270)	4.1					2.2
23	270	4.0					4.0

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

TABLE 61
IONOSPHERIC DATA

foF2, Mc, March 1956

75°W Mean Time

Station: Washington, D.C. Lat. 38.7°N Long. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
01	40	F	F	F	F	F	F	F	78	85	98	102	110	110	105	108	108	102	94	82	70	62	51	48	
02	49	F	F	F	F	F	F	F	80	90	103	115	115	115	112	110	105	100	98	84	72	66	64	60	
03	46	F	F	F	F	F	F	F	80	90	103	115	115	115	112	110	105	100	98	84	72	66	64	60	
04	46	F	F	F	F	F	F	F	80	90	103	115	115	115	112	110	105	100	98	84	72	66	64	60	
05	44	F	F	F	F	F	F	F	80	90	103	115	115	115	112	110	105	100	98	84	72	66	64	60	
06	58	F	F	F	F	F	F	F	80	90	103	115	115	115	112	110	105	100	98	84	72	66	64	60	
07	48	46	44	40	37	33	33	63	75	93	98	103	107	110	106	105	110	108	98	82	73	65	56	55	
08	50	48	48	44	40	39	38	66	85	90	98	98	108	110	105	106	106	102	98	83	72	66	57	52	
09	50	50	47	48	46	43	40	66	80	86	96	105	105	109	105	107	105	100	98	90	84	76	68	63	
10	58	52	52	58	49	43	45	76	96	100	108	112	114	115	115	115	114	110	107	100	100	80	86	68	
11	85	74	62	58	68	71	81	84	97	105	105	103	105	109	107	108	108	98	92	85	79	77	74	64	
12	59	53	44	43	38	38	38	58	70	75	90	96	100	103	105	100	100	96	93	79	74	67	62	58	
13	53	51	52	48	40	40	43	71	95	98	109	115	116	107	118	113	110	102	94	84	77	72	70	68	
14	62	60	56	50	39	33	38	70	86	102	105	107	112	114	112	110	103	100	98	88	84	77	66	66	
15	65	66	63	53	49	45	44	63	78	90	105	110	110	110	110	107	107	108	99	91	77	75	70	66	
16	62	60	56	52	49	47	48	70	80	89	100	107	110	110	108	108	106	102	97	90	76	72	68	66	
17	60	59	60	59	55	53	57	74	90	100	105	114	110	117	116	114	114	110	103	92	80	78	74	71	
18	68	69	58	55	53	54	62	83	96	107	111	111	114	115	117	118	114	112	102	94	78	75	72	70	
19	68	68	63	62	56	51	54	76	92	102	110	111	115	118	122	116	114	104	105	99	92	84	87	84	
20	78	71	70	59	55	49	56	84	99	110	115	115	120	120	116	116	115	112	107	96	80	78	74	76	
21	64	59	55	46	39	42	50	62	66	67	70	82	94	94	102	96	93	90	84	76	68	56	40	19	
22	37	29	30	34	30	30	32	44	46	50	52	54	54	54	58	61	62	74	88	87	85	66	44	45	
23	34	32	33	33	29	25	33	54	72	86	96	100	101	98	93	92	96	92	93	84	72	68	68	64	
24	62	60	56	52	45	42	47	63	72	70	80	88	94	96	93	92	86	90	98	90	86	76	72	70	
25	60	58	56	48	48	45	50	80	98	108	110	115	121	118	117	117	117	115	112	97	85	84	76	68	
26	64	56	54	52	45	25	41	63	73	73	69	76	82	86	87	91	90	86	88	86	77	70	69	60	
27	59	56	55	50	49	39	48	73	91	100	113	120	121	117	115	116	116	115	108	98	94	87	85	73	
28	76	74	72	67	57	50	52	67	77	78	85	94	96	98	96	97	98	92	96	100	100	68	70	70	
29	70	70	59	44	27	32	56	74	86	92	98	105	111	116	112	110	108	97	97	92	78	71	70	67	
30	58	51	49	52	48	40	52	79	94	106	109	132	126	126	120	120	115	117	118	105	86	79	74	72	
31	69	68	64	55	50	46	48	60	64	66	66	63	66	66	66	68	70	71	70	71	65	58	51	47	
MED	60	56	55	50	46	42	45	66	80	90	98	105	110	110	107	108	106	100	97	87	77	72	68	65	
NO	30	31	31	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 62
IONOSPHERIC DATA

faF2, Mc, March 1956

75°W Mean Time

Station: Washington, D.C. Lat. 38.7°N Long. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec.

Manual ☐ Automatic ☒

	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2300	
01	F	F	F	F	F	F												U S							
02	37	35	32	29	24	20	36	67	85	96	105	105	110	110	106	107	107	99	89	77	68	57	50	49	
03		F	F	U F	U P	F	U F	U F	U S																
04	46	37	39	32	35	42	45	72	78	100	110	112	115	115	110	110	102	100	90	76	64	64	67	54	
05	F	U J	F	F	U F	F	F	F	F	E G	E G	E G	E G	E G				F	F	F	F	F	F	F	
06	38	31	31	26	31	26	28	32	37	39	41	42	43	42	46	52	65	52	39	32	23	20	18		
07		F	I C	I F	U F	F																		F	
08		22	19	19	17	16	32	50	71	75	95	96	100	103	96	92	94	93	82	72	68	59	53	48	
09	F	F	C	C	F	F																			
10	40	42			38	35	44	68	80	90	98	103	103	105	106	113	105	98	94	76	72	64	58	60	
11	F																								
12	58	57	56	48	47	44	51	70	92	99	103	110	110	110	110	107	106	96	92	74	66	58	54	48	
13	48	45	43	39	35	32	47	75	82	97	100	106	107	105	102	108	108	105	90	78	71	59	55	52	
14	50	49	45	42	39	37	50	75	87	92	96	100	112	105	105	108	105	102	90	80	72	59	54	52	
15	U F	U F	U F	U F	U F	F	F																		
16	50	48	47	46	44	41	52	77	84	94	100	103	105	106	105	105	102	100	96	86	80	72	67	61	
17	U S	F	U F	F	F	F	F																	U S	
18	52	50	52	50	47	43	54	86	102	107	110	115	115	112	115	115	110	110	98	105	90	84	71	60	
19		U J	U J		F	F	F	F	F																
20	80	72	60	65	68	77	78	92	102	107	103	103	107	110	106	107	103	96	88	82	78	76	70	61	
21	F	F	F	F	F	F	F	F	F															F	
22	56	48	44	40	38	31	45	66	70	85	92	100	105	105	104	102	100	92	90	76	72	66	60	53	
23	F	F	F																						
24	54	52	52	44	41	42	58	88	100	105	109	110	116	116	116	113	104	100	90	77	74	72	70	67	
25	58	59	52	46	37	31	56	78	96	97	103	110	110	112	113	108	102	100	96	87	78	68	67	66	
26	64	67	59	50	47	43	54	72	89	96	111	110	108	107	108	107	110	107	101	81	76	71	69	66	
27	59	58	53	49	47	46	61	76	88	97	105	110	108	110	108	106	106	98	95	84	78	68	68	61	
28	U F	U F	U F	U F	U F	F	F																		
29	59	61	60	58	54	51	68	79	96	107	110	115	117	116	114	115	110	110	98	85	87	74	72	68	
30	64	58	56	52	55	57	74	95	100	108	110	110	112	116	118	117	111	108	98	86	77	75	71	70	
31	F	F	F				F	F										U S							
32	65	67	63	62	55	50	68	87	100	106	112	115	118	120	119	114	110	100	97	94	87	86	85	81	
33	70	70	64	57	52	49	68	96	105	110	115	115	120	118	116	115	115	110	100	88	78	78	76	68	
34		U J	U J		F	F	F	F																	
35	63	58	48	38	42	47	58	63	67	69	74	90	92	98	100	92	93	90	82	70	70	50	28	23	
36	U F	U F	U F	F	F	U J	39	F	F	49	49	52	54	54	56	58	61	66	84	86	88	72	58	47	38
37	U F	U F	U F	F	U F	U F	F	F	F	F	F	F	102	101	100	96	94	94	93	90	76	70	68	64	62
38	U F	U F	U F	F	F	F	F																		
39	60	58	56	48	44	40	58	68	70	76	85	94	94	95	92	92	88	92	94	88	84	72	72	68	
40	58	58	52	48	47	42	70	87	102	105	113	117	122	119	117	118	115	111	112	90	85	78	70	68	
41		F	F	F	F	U F								F	I C										
42	62	54	53	48	38	28	54	72	70	72	71	79	84	86	88	90	88	89	90	78	74	70	66	60	
43	58	55	53	49	42	36	61	82	98	104	115	123	116	120	122	117	114	106	100	96	90	84	84	71	
44	82	74	71	63	52	48	60	68	75	82	88	96	100	98	98	98	92	90	112	100	95	68	70	71	
45	69	68	60	34	28	35	63	84	92	96	103	111	113	114	113	110	103	98	95	86	76	69	68	62	
46	F	F	F	F	U F	F																			
47	50	48	52	52	44	41	68	89	103	107	115	126	112	120	115	117	117	117	100	100	89	78	76	76	
48	68	65	61	53	47	47	56	63	64	68	64	66	66	66	67	67	70	72	71	68	58	54	47	40	
MED	58	55	52	48	42	41	56	75	87	96	103	106	108	110	106	107	104	99	94	82	76	68	67	61	
NO	30	31	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 63
IONOSPHERIC DATA

fo F1, Mc, Morch 1956

75° W Mean Time

Station: Washington, D.C. Lat. 38.7°N Long. 77.1°W Sweep 1.0 Mc to 250 Mc in 13.5 sec. Manual ☐ Automatic ☒

	Q0	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01								Q	L	L	L	L	L	460	L	L	L	Q	Q					
02								Q	Q	L	L	L	L	450	L	L	L	Q						
03								Q	L	F	F	F	430	430	410	400	H	370	350	Q				
04								Q	L	L	L	L	L	L	L	L	L	Q						
05								Q	L	L	L	L	L	L	L	L	L	Q						
06								Q	Q	L	L	L	L	L	L	L	L	Q						
07								Q	Q	L	L	L	L	L	L	L	L	L	Q					
08								Q	L	L	L	L	L	L	L	L	L	L	Q					
09								Q	L	L	L	L	430	430	430	L	L	Q						
10								Q	L	L	L	L	480	450	L	L	Q	Q						
11								Q	L	L	L	L	L	L	L	L	L	L	Q					
12								Q	L	L	L	L	L	L	L	L	L	L	Q					
13								Q	Q	L	L	L	L	470	L	L	L	L	Q	Q				
14								Q	Q	L	L	L	L	L	L	L	L	L	Q					
15								Q	L	L	L	L	B	L	L	L	L	Q	Q					
16								Q	Q	L	L	L	L	L	L	L	L	Q	Q					
17								Q	L	L	L	L	L	L	L	L	L	Q	Q					
18								Q	L	L	L	L	L	L	L	L	L	L	Q					
19								Q	L	L	L	L	L	L	L	L	L	Q	Q					
20								Q	Q	L	L	L	L	L	L	L	L	Q	Q					
21								L	L	L	L	H	540	L	L	L	L	L	Q					
22								L	410	440	470	480	490	H	490	480	480	460	410	Q				
23								Q	L	L	L	500	L	L	490	440	L	Q	Q					
24								Q	L	L	L	U L	540	580	L	L	L	L	Q					
25								L	L	L	L	L	L	L	L	L	L	Q	Q					
26								L	L	L	U L	H	530	530	520	520	470	460	L	L	Q			
27								Q	L	L	L	L	L	L	L	L	L	L	Q					
28								Q	L	L	L	470	L	L	L	C	L	L	Q					
29							Q	L	L	L	L	L	L	L	L	L	L	Q	Q					
30								Q	L	L	L	L	L	L	L	L	L	L	Q					
31								L	L	I B	480	500	520	H	520	H	510	480	430	Q				
MED												500	490	460	480	460								
NO									1	3	4	9	7	8	6	5	3	2						

TABLE 64
IONOSPHERIC DATA

foE, Mc, March 1956

75° W Mean Time

Station: Washington, D.C. Lat. 38.7° N Long. 77.1° W

Sweep 1.0 Mc to 25.0 Mc in 13.5 sec.

Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01								S	250	300	330	340	350	350	330	320	H	H	240	S				
02								U S	160	250	290	300	330	350	350	330	320	280	B					
03								U A	200	U A	H	U S	310	320	330	330	320	300	250	B	B			
04								H	210	H	U A	310	330	320	330	330	320	290	230					
05								A	A	300	H	320	330	330	I C	310	290	310	280	A				
06								A	240	I A	H	A	A	A	H	H	H	U A	U A					
07								E S	160	260	300	330	340	340	330	340	320	300	240	A				
08								160	260	310	U P	330	350	350	350	340	330	300	250	U A	U P			
09								210	280	H	320	330	350	360	350	350	330	310	A					
10								200	270	310	I A	340	360	380	370	350	340	310	250					
11								H	220	H	310	340	340	350	300	310	320	310	250	160				
12								H	200	H	U A	330	350	360	H	U P	330	300	230					
13								A	270	A	B	350	370	370	360	340	310	260	E S					
14								H	180	U A	U A	I A	U A	370	370	H	360	340	310	250	S			
15								H	210	260	290	320	350	370	370	360	340	310	250					
16								H	210	260	290	310	350	350	360	350	330	310	260	U S				
17								230	280	310	320	360	380	370	370	350	320	260	170					
18								A	A	A	350	360	360	370	370	360	340	320	270	H	S			
19								H	210	U H	U A	U A	U A	H	H	H	U H	U A	280	U H				
20								A	300	330	A	A	350	360	350	340	320	270	H	S				
21								220	280	320	340	360	350	350	330	330	300	250	A					
22								H	220	260	310	A	A	A	A	330	300	250	U P					
23								230	280	320	H	330	350	360	370	360	320	310	260	S				
24								A	290	320	A	A	360	360	360	340	310	270	180	S				
25								230	270	310	320	350	370	350	350	330	310	260						
26								H	220	U A	H	I R	U R	U H	H	U H	H	260						
27								H	240	290	320	330	330	360	H	H	360	330	310	260	170			
28								230	280	300	330	330	330	360	H	I C	340	320	310	260	200			
29							160	230	280	H	320	330	340	340	350	340	320	300	260	200				
30								230	290	320	I A	H	350	370	360	360	350	330	310	250	180			
31								H	240	U A	I B	H	H	360	H	U H	U H	H	250	U H				
MED								220	270	310	330	350	360	360	350	330	310	260	180					
NO							1	24	29	29	27	27	29	30	30	31	31	27	14					

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 65
IONOSPHERIC DATA

fEs, Mc, Morch 1956

75° W Mean Time

Station Washington, D.C. Lat. 38.7° N Long. 77.1° W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01	S	S	S	E	E	S	S	32	37	G	G	G	G	G	72	G	G	G	G	S	E	S	S	S
02	S	S	S	S	S	S	S	G	G	G	G	G	G	G	G	G	G	G	S	S	S	S	S	S
03	S	S	E	E	E	S	18	21	29	30	G	50	G	40	G	G	31	B	B	B	S	13	E	S
04	S	30	17	17	29	32	E	G	G	32	G	31	33	G	G	G	G	G	S	S	S	S	S	E
05	E	E	E	C	C	S	14	18	25	29	G	G	G	C	G	G	30	42	21	S	S	S	S	13
06	37	20	12	12	E	S	S	18	26	30	41	44	60	45	31	22	H	H	20	20	17	16	S	S
07	S	S	S	S	S	S	S	G	G	66	34	37	38	35	19	19	25	20	17	16	S	S	E	S
08	S	E	S	E	E	E	S	18	G	G	G	G	G	G	G	G	G	F	G	S	S	S	S	S
09	S	S	S	S	S	S	S	Y	G	G	G	G	G	G	G	G	G	25	S	S	S	S	S	S
10	S	E	S	S	E	S	S	46	G	G	G	G	G	G	G	G	G	26	S	S	S	S	S	S
11	30	24	E	E	S	E	S	G	G	33	26	38	38	G	G	G	G	G	G	S	S	25	S	S
12	S	E	E	E	E	E	E	G	G	42	42	G	G	G	66	42	G	38	S	S	S	S	S	E
13	23	E	E	S	S	S	S	20	40	39	B	31	84	70	20	44	44	35	S	S	S	S	S	S
14	S	S	S	S	E	S	S	G	34	30	33	36	24	22	Y	G	G	34	16	S	S	S	S	21
15	S	S	E	E	S	S	S	G	G	G	41	36	Y	B	Y	G	G	37	G	G	S	S	S	S
16	S	S	S	E	E	S	S	G	G	C	C	G	G	G	G	G	G	G	G	S	S	S	S	21
17	21	S	S	S	S	S	S	G	G	33	41	42	G	78	G	G	G	G	G	S	S	S	E	S
18	S	S	E	E	S	S	S	36	37	41	Y	68	G	38	Y	G	G	36	19	S	E	S	S	S
19	S	S	E	E	E	E	S	42	37	40	Y	44	56	G	37	26	23	34	29	G	S	S	S	S
20	S	23	24	28	30	22	28	44	G	41	50	44	36	G	G	G	G	33	19	S	S	48	34	S
21	46	S	S	S	S	S	S	G	42	37	G	40	40	G	G	G	G	21	S	S	S	S	S	S
22	S	S	E	E	S	E	28	G	28	37	33	34	34	45	31	G	30	G	G	S	S	S	S	S
23	S	S	S	E	Y	S	26	G	G	G	G	G	G	G	Y	110	84	G	19	S	19	23	S	S
24	S	S	S	40	43	30	31	37	45	G	110	54	G	G	G	20	21	19	G	S	S	S	S	S
25	S	S	S	E	E	E	25	60	G	G	G	G	G	36	G	G	G	18	S	E	S	S	S	S
26	S	E	E	E	E	S	S	G	Y	32	26	34	G	34	35	34	G	G	C	S	E	S	E	35
27	S	S	S	31	27	E	S	G	G	G	G	G	G	G	G	34	G	G	G	S	S	E	S	S
28	S	S	S	S	S	S	17	32	37	32	34	34	36	72	40	C	G	G	G	S	S	S	S	S
29	S	28	S	S	E	S	G	G	78	G	G	G	G	22	19	G	G	G	G	S	S	S	S	S
30	S	S	S	S	S	S	S	G	G	32	32	G	G	G	G	G	G	G	G	S	S	E	S	S
31	S	S	S	33	S	S	S	18	40	B	G	G	G	G	24	G	G	G	20	45	E	S	S	S
MED	U 26						U 18		25	30											U 16		U 21	
NO	6	11	13	19	17	11	9	31	31	29	30	31	31	30	31	30	31	31	24	4	7	7	6	7

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 66
IONOSPHERIC DATA

f min, Mc, March 1956

75° W Mean Time

Station: Washington, D.C. Lat. 38.7° N Long. 77.1° W

Sweep 1.0 Mc to 25.0 Mc in 13.5 sec.

Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01	E S	E S	E S	E	E	E S	E S	E	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E	E S	E S	E S
02	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
03	E S	E S	E S	E	E	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E	E S	E S
04	E S	E S	E S	E S	E	E	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E
05	E	E	E	C	C	E	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E	E
06	E S	E S	E	E	E	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
07	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
08	E S	E S	E S	E S	E	E	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
09	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
10	E S	E S	E S	E S	E	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
11	E	E	E	E	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
12	E S	E	E	E	E	E	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E
13	E S	E	E	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
14	E S	E S	E S	E S	E	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
15	E S	E S	E S	E	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
16	E S	E S	E S	E	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
17	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
18	E S	E S	E	E	E	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
19	E S	E S	E S	E	E	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
20	E S	E S	E S	E	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
21	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
22	E S	E S	E S	E	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
23	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
24	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
25	E S	E S	E S	E	E	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
26	E S	E S	E S	E	E	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
27	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
28	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
29	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
30	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
31	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
MED																								
NO																								

TABLE 67
IONOSPHERIC DATA

h' F2, Km, Morch 1956

75° W Mean Time

Station: Washington, D.C. Lot. 38.7° N Long. 77.1° W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
01	280	280	280	290	290	280	320	250	240	240	250	250	270	280	260	250	250	240	220	220	U S	230	230	250	U S
02	290	280	340	290	300	260	230	240	230	240	250	270	260	260	260	260	250	230	230	210	240	260	300	280	
03	330	360	320	350	300	320	400	320									670	470	410	300	300	280	280	260	460
04	U F	U S	U S	U S	U S				L		L		260	290	280	250	250	240	230	220	240	240	240	240	
05	250	270	280			270	250	230	230	250	250	270	260		270		250	240	230	220	250	250	250	260	
06	270	270	260	250	270	260	260	240	230	250	250	270	260	260	270	260	240	230	230	230	230	230	240	250	
07	270	260	260	250	260	260	260	230	230	250	250	260	270	260	270	270	250	240	220	215	230	240	230	260	
08	260	260	250	250	250	250	240	230	240	240	240	250	290	260	240	240	230	240	220	220	220	240	250	250	
09	270	270	270	270	250	240	230	220	230	240	250	250	250	280	250	270	250	240	230	230	230	240	240	240	
10	250	300	300	270	270	250	260	250	240	240	250	250	270	270	280	250	240	250	270	300	260	280	230	260	
11	250	230	290	270	290	250	260	240	260	260	250	270	290	280			240	240	240	230	250	250	240	240	
12	250	270	280	290	280	290	290	250	250	270	270	260	270	270	270	270	260	240	240	220	240	240	250	270	
13	290	270	270	230	260	290	260	230	240	240	260		270	270	260	250	240	240	220	230	250	250	260	260	
14	260	250	240	240	250	290	320	230	230	250	270	260	250	280	270	250	250	250	240	230	240	250	250	270	
15	260	260	260	250	260	270	290	240	240	250	280	270	250	260	280	250	250	240	230	220	240	250	260	260	
16	260	250	260	280	300	320	290	240	230	250	260	270	270	290	290	280		240	240	240	240	240	260	260	
17	270	280	280	260	260	250	250	240	260	250	250	290	260	270	270	270	270	240	240	220	230	240	250	260	
18	250	260	270	270	290	280	250	230	230	260	250	260	260	300	290	260	250	250	230	230	230	250	260	270	
19	270	270	250	260	240	250	250	230	240	240	240	250	300	310	250	250	250	240	250	240	260	250	270	250	
20	230	250	250	250	270	250	260	230	230	230	250		280			250		240	230	230	240	280	260	240	
21	U A	280	290	340	340	330	310	260	260	270	270	370		L	L		320		280	270	270	290	290	400	U S
22	U S	400	380	370	330	350	340	340			510	550	600	570	640	530	470	470	400	280	250	240	280	260	350
23	330	420	390	330	340	350	320	270	280	250	260	260	270	280	270	270		250	240	230	230	260	250	260	
24	280	280	270	280	300	270	260	250	260	270	330		340		340			250	270	250	230	250	260	250	
25	230	290	280	280	270	290	260	240	240	250	230		290	270	270	250	250	230	240	210	240	240	230	250	
26	250	230	260	260	270	290	290	280	280		380	380	360	350	330	300	280	250	240	240	240	250	270	270	
27	290	290	280	280	270	260	250	240	250	240		260		290			260	250	250	230	250	240	260	230	
28	280	260	260	250	250	280	280	250	280	320	300	290		290	300	290	280	280	270	270	240	240	330	300	
29	280	270	270	320	390	330	270	250	260	250			270	300	290	270	260	250	250	240	220	250	270	260	
30	250	300	310	270	250	260	250	240	250	240	240	270	280	250	330	280	250	250	240	230	220	220	240	270	
31	250	280	270	280	290	310	300	290	330	380	420	470	450	470	430	390	340	290	270	U A	U S	280	270	270	U S
MED	270	270	270	270	270	280	260	240	240	250	250	270	270	280	270	270	250	240	240	230	240	250	260	260	
NO	31	31	31	30	30	31	31	30	28	30	28	26	27	28	27	27	26	31	31	31	31	31	31	31	

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 68
IONOSPHERIC DATA

h¹ F₁, Km, March 1956

75° W Mean Time

Station: Washington, D.C. Lat. 38.7° N Long. 77.1° W

Sweep 1.0 Mc to 25.0 Mc in 13.5 sec.

Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
01									240	210	210	230	210	220	220	235	220								
02										220	230	200	200	220	220	220	230								
03									230	215	200	240	235	240	250	230	250	290							
04									230	230	215	210	200	205	210	215	235								
05									220	210	200	210	210	210	220	220	230								
06										220	215	220	215	205	205	215	230								
07										215	215	200	205	210	215	200	230	240							
08									230	220	210	210	205	210	210	210	210	225							
09									225	220	210	200	200	220	220	230	230								
10									230	230	230	220	210	220	220	230									
11									230	215	215	200	230	220	215	220	220	240							
12									240	225	215	220	200	200	210	215	240	240							
13									230	210	210	205	215	215	200	215	230								
14										210	205	210	200	215	220	230	225	240							
15									230	210	215	185	210	220	220	215	225								
16										220	210	215	210	230	215	220	235								
17									235	220	215	220	215	215	220	215	225								
18									225	220	215	210	205	215	225	220	230	240							
19									225	215	215	200	205	235	230	210	225								
20										220	210	200	190	230	230	230	220								
21								250	230	215	220	210	230	235	230	225	240	250							
22								280	250	240	210	200	200	240	240	240	240	270							
23									240	230	220	220	200	200	210	205	230								
24									230	210	200	200	230	230	220	220	230	240							
25								230	230	215	200	230	230	220	220	215	220								
26								260	235	240	220	205	195	220	220	230	225	235							
27									230	225	205	215	210	210	220	225	225	235							
28									240	225	215	215	210	220	230	235	240	250							
29								250	230	220	220	215	220	215	230	225	230								
30									230	220	210	205	230	225	220	230	240	250							
31								275	240	245	230	220	220	220	230	235	235	250							
MED								255	230	220	215	210	210	220	220	220	230	240							
NO								6	25	31	31	31	31	31	31	31	30	15							

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 69
IONOSPHERIC DATA

h'E, Km, March 1956

75° W Mean Time

Station: Washington, D.C. Lat. 38.7° N Long. 77.1° W

Sweep 1.0 Mc to 25.0 Mc in 13.5 sec.

Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
01								113 E S	109	109	109	105	105	107	101	109	109	U S 113 B	S						
02								137	109	105	109	109	109	109	105	105	115	B	B						
03								129 H	119 H	101	107	109	109	101	109	109	111								
04								127 A	117	109	109	107	109	109	109	109	111	119	A						
05								119	109	111	119	109	106	103	115	115									
06								U A 125 S	113	109	109	109	109	110	111	111		A	A						
07									115	109	107	105	105	103	111	111	115	119	U A						
08								125	109	109	109	109	109	105	103	105	111	119	135						
09								U S 139	105	111	111	109	105	101	111	109	111	121							
10								125	111	109	121	109	109	105	105	115	111	121							
11								H 111	H 103	103	101	105	103	101	107	101	101	115	S						
12								H 111	109	109	105	103	101	103	101	105	109	117							
13								U S 111	107	107	106	105	105	109	109	109	109	111	S						
14								H 117	107	107	105	E A 121	E A 113	E A 111	107	109	109	117	S						
15								H 111	109	105	107	E A 117	B 115	E A 109	107	109	117	S							
16								E S 121	I C 115	U C 109	I C 109	109	107	107	109	109	113	119	U S 131						
17								U S 119	113	109	109	109	105	105	109	109	111	115	E S 141						
18								115	109	109	107	105	109	107	109	109	109	115	S						
19								H 115	H 113	109	109	I A 105	H E A 105	E A 121	E A 117	E A 117	103	105	E S 131						
20								121	109	109	107	105	H 101	103	105	105	111	111	S						
21								119	109	109	109	105	105	103	101	109	111	115	135						
22								H 117	111	111	109	109	109	109	109	105	119	119	129						
23								111	115	111	107	101	101	101	101	109	109	115	S						
24								115	103	101	101	101	101	101	109	111	111	111	130						
25								111	105	101	101	101	105	103	101	101	101	101	S						
26								E S 117	E A 119	E A 117	101	99	H 99	H 99	H 99	H 99	113	113							
27								115	107	101	101	105	101	101	101	101	109	109	129						
28								113	109	103	103	101	109	101	109	I C 107	105	111	120						
29								119	111	111	109	109	109	107	111	111	111	109	U S 127						
30								115	109	105	103	101	101	101	101	101	109	109	119						
31								H 119	I B 105	H 105	H 101	H 109	U B 101	101	101	99	E B 111	E S 109	121						
MED NO								115	109	109	107	105	105	103	107	109	E 111	115	129						
								1	26	30	30	31	29	29	27	30	30	30	27	10					

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 70
IONOSPHERIC DATA

(M 3000) F2, March 1956

75° W Mean Time

Station Washington, D.C. Lat. 38.7° N Long. 77.1° W

Sweep 1.0 Mc to 25.0 Mc in 13.5 sec.

Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
01	280	290	280	290	280	290	280	280	280	310	320	310	310	300	300	300	U S	U S	U S	U S	310	285	270			
02	275	280	250	260	290	295	310	330	340	345	310	310	305	300	305	300	300	310	310	300	310	290	260	290		
03	260	F	S	U F	F	F	F	U F	F	F	G	G	G	G	G	G	F	F	F	F	F	F	F	F		
04		F	U F	U F	U F	U F	U F	U F	F		310	340	300	305	305	315	310	305	310	315	320	310	300	310	315	310
05		F	F	F	C	C	F	F	F		340	320	320	310	310	300	310	300	310	310	310	F	F			
06	290	290	290	300	300	290	300	330	340	325	320	320	320	310	300	300	310	305	305	310	305	300	300	290	290	
07	290	290	295	300	290	290	290	320	345	335	310	320	305	310	310	300	305	305	325	300	305	305	290	285		
08	290	290	295	295	300	305	310	330	350	335	310	315	310	320	300	295	310	315	315	305	310	320	300	300		
09	300	290	295	290	300	310	310	340	350	340	320	310	310	310	300	300	300	300	310	300	300	310	310	300		
10	290	270	F	F	F	F	F		U S	320	300	300	290	290	280	285	290	285	280	U S	270	275	260	290	270	
11	270	260	S	U S	250	275	280	310	310	305	300	290	290	290	290	290	290	300	290	285	295	300	295	290		
12	290	285	F	F	F	F	F	310	330	320	320	300	300	290	290	290	290	300	300	290	300	290	285	270		
13	280	280	280	300	260	270	275	320	315	320	300	290	290	290	290	290	290	300	305	290	285	280	280	280		
14	285	290	285	290	280	270	260	330	320	325	315	305	295	290	300	295	300	300	300	300	295	300	290	290		
15	285	280	290	290	270	280	280	310	340	310	305	310	295	290	290	295	300	305	320	300	300	290	285	285		
16	290	290	290	280	U F	U F	F	U F	320	320	320	305	305	300	300	295	305	300	305	305	295	300	300	300	295	
17	285	280	285	290	295	290	310	340	330	310	300	300	290	290	290	290	290	290	H	300	290	285	290	295	290	
18	290	290	F	F	270	270	320	320	320	310	310	295	290	285	285	290	295	300	305	295	305	285	290	270		
19	285	275	F	F	280	285	300	320	325	300	295	290	285	290	280	285	290	280	290	U S	280	280	270	280		
20	275	275	290	295	290	290	300	310	330	320	310	300	285	300	290	290	290	300	310	300	295	285	285	300		
21	290	280	260	240	255	250	290	310	305	300	285	275	270	260	255	265	265	285	285	280	270	265	235	F		
22	250	250	F	260	250	250	280	280	250	260	250	230	240	225	245	255	250	240	280	280	285	270	270	250		
23	260	240	250	270	270	280	280	310	310	300	310	305	300	305	305	305	300	310	310	300	290	290	270	280		
24	270	270	275	290	270	290	300	310	330	320	290	270	265	265	280	280	285	275	295	290	280	280	275	290		
25	280	265	F	F	270	280	310	340	330	330	300	300	295	295	290	290	290	300	300	315	295	290	300	290		
26	285	280	F	F	285	285	310	315	295	275	270	270	270	275	275	290	290	290	295	300	295	290	285	290		
27	270	270	270	270	270	280	320	325	320	310	300	290	285	285	280	280	280	285	290	290	280	275	280	285		
28	270	280	275	280	280	260	285	300	320	285	290	295	285	290	280	C	280	280	270	U S	275	275	280	290	255	
29	275	245	270	265	250	270	290	310	310	320	300	290	290	290	290	295	300	300	305	300	290	300	285	300		
30	300	290	270	275	295	295	310	330	320	320	300	315	305	295	280	300	270	295	300	310	275	290	280	275		
31	280	240	260	260	250	250	270	300	280	B	270	255	260	260	265	270	280	290	295	295	290	270	275	270		
MED	285	280	280	280	275	280	290	320	320	320	300	300	290	290	290	290	290	300	300	300	295	290	285	290		
NO	30	30	29	30	30	30	31	31	31	30	31	31	31	31	31	30	31	31	31	31	31	31	30	29		

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 71
IONOSPHERIC DATA

(M3000) F1, March 1956

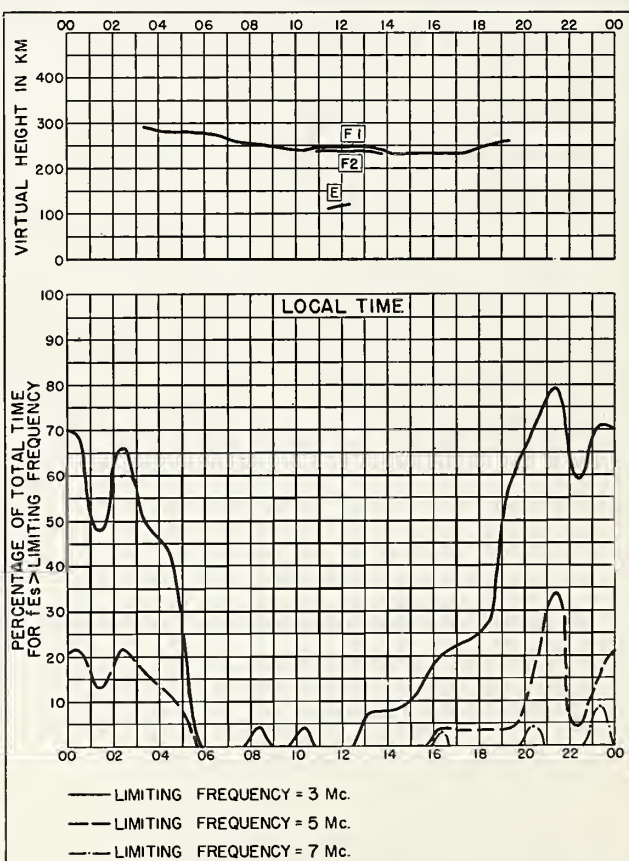
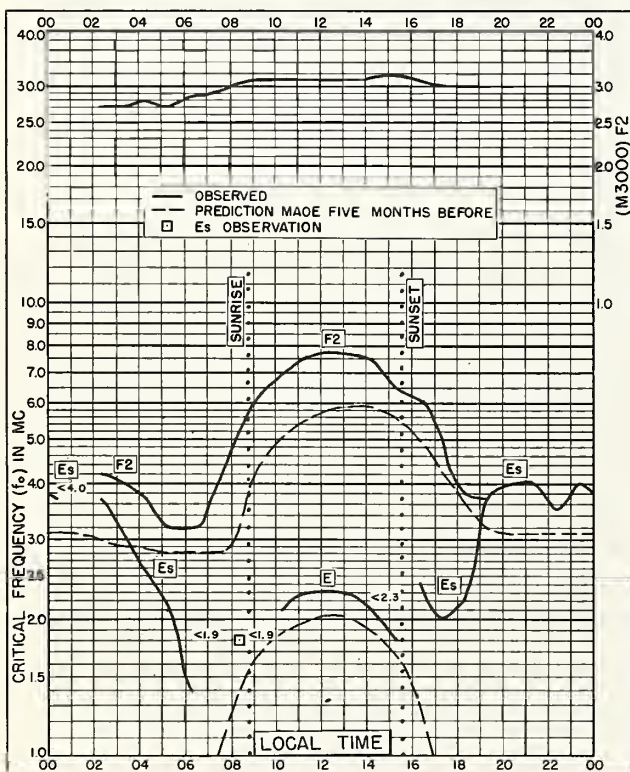
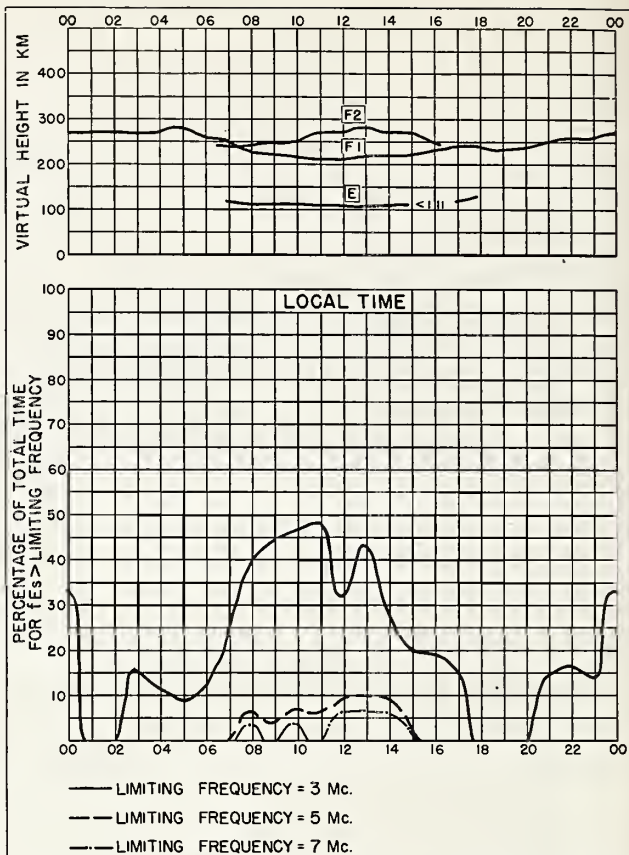
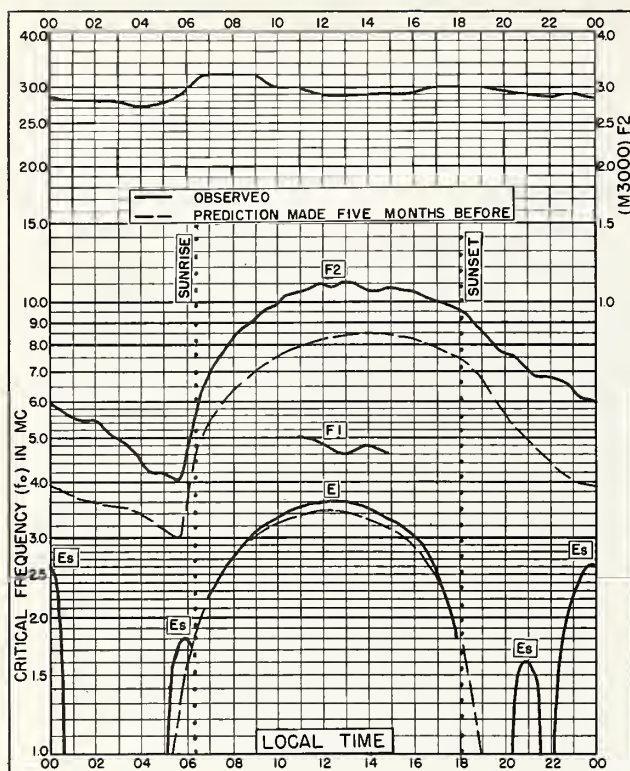
75° W Mean Time

Station: Washington, D.C. Lat. 38.7° N Long. 77.1° W

Sweep 1.0 Mc to 25.0 Mc in 13.5 sec.

Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01								Q	L	L	L	L	L	390	L	L	L	Q	Q					
02								Q	Q	L	L	L	L	400	L	L	L	Q						
03								Q	F	F	F	F	H						Q					
04								Q	L	L	L	L	H	L	H	L	L	Q						
05								Q	L	L	L	L	L	L	L	L	L	Q						
06								Q	Q	L	L	L	L	H	H	L	L	Q						
07								Q	Q	H	L	H	L	H	L	L	H	L	Q					
08								Q	L	L	L	L	L	L	L	L	L	L	Q					
09								Q	L	L	L	L	L	L	L	L	L	Q						
10								Q	L	L	L	L	L	380 390	L	L	Q	Q						
11								Q	L	H	L	H	L	L	L	H	L	L	Q					
12								Q	L	L	L	L	L	L	L	L	L	L						
13								Q	L	H	B	H	L	390	L	L	L	Q	Q					
14								Q	Q	L	H	L	L	H	L	L	L	L	Q					
15								Q	L	L	L	H	I B	L	L	L	L	Q	Q					
16								Q	Q	L	L	L	L	L	L	L	L	Q	Q					
17								Q	L	L	L	L	L	L	H	H	L	Q	Q					
18								Q	L	L	L	L	L	L	L	L	L	L	Q					
19								Q	L	L	L	H	H	H	L	L	L	Q	Q					
20								Q	Q	L	L	L	L	L	L	L	L	Q	Q					
21								L	L	L	L	H	L	L	L	L	L	L	Q					
22								L	330	340	360	360	350	340	340	330	320	310	Q					
23								Q	L	L	L	L	L	L	L	L	L	Q	Q					
24								Q	L	L	L	U L	U L	L	L	L	L	L	Q					
25								L	L	L	L	L	L	L	L	L	L	Q	Q					
26								L	L	L	U H	H	U L	U L	U L	U L	L	L	Q					
27								Q	L	L	L	L	L	L	L	L	L	L	Q					
28								Q	L	L	L	370	L	L	L	I C	L	L	Q					
29							Q	L	L	L	L	L	L	L	L	L	L	Q	Q					
30								Q	L	L	L	L	L	L	L	L	L	L	Q					
31								L	L	I B	340	340	335	330	345	340	360	L	Q					
MED												350	350	380	360	350								
NO									1	2	4	9	7	8	6	5	3	2						



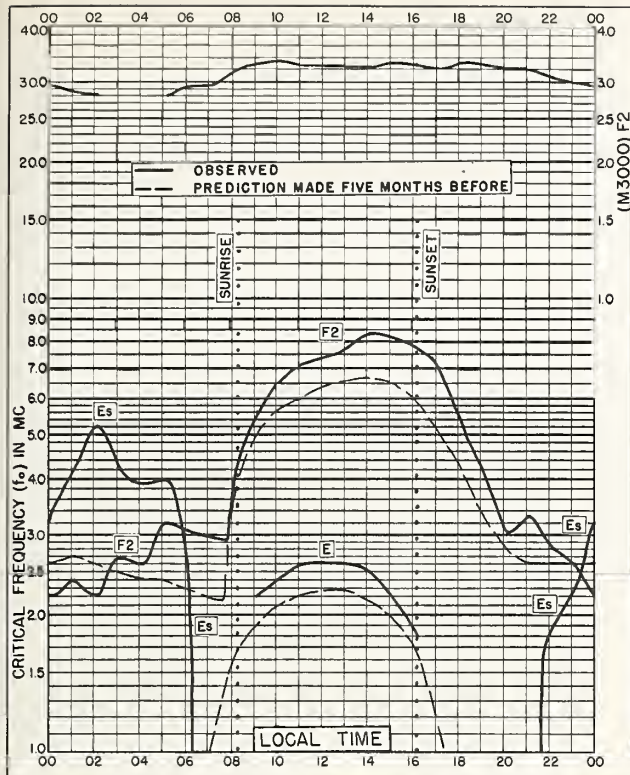


Fig. 5. FAIRBANKS, ALASKA
64.9°N, 147.8°W FEBRUARY 1956

NBS 505

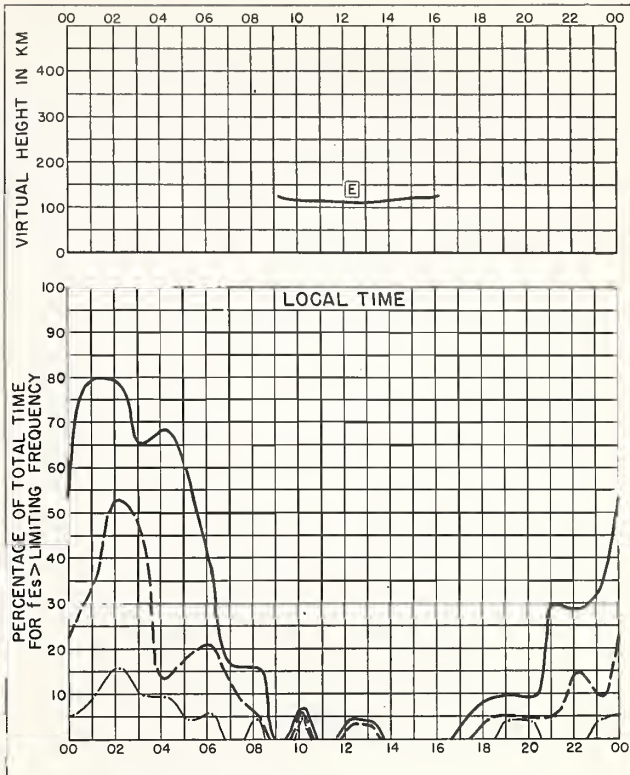


Fig. 6. FAIRBANKS, ALASKA FEBRUARY 1956

NBS 490

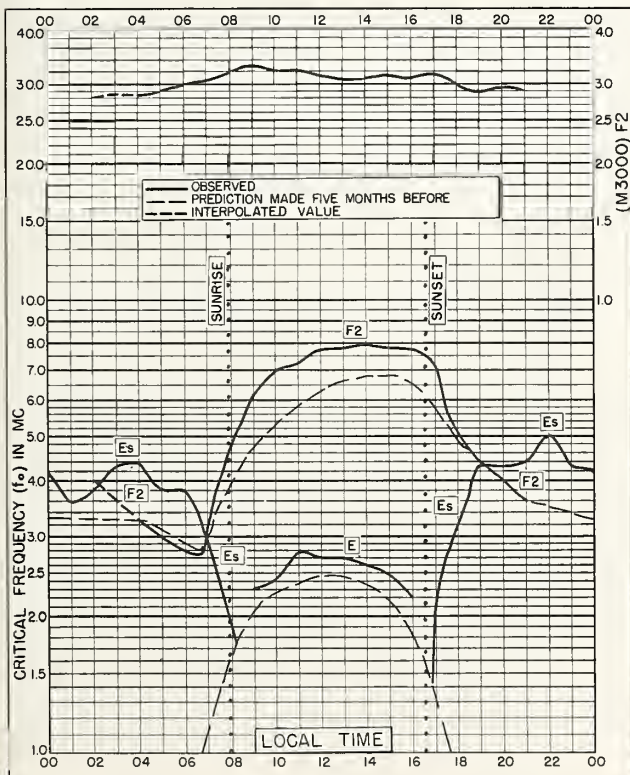


Fig. 7. NARSARSSUAQ, GREENLAND
61.2°N, 45.4°W FEBRUARY 1956

NBS 505

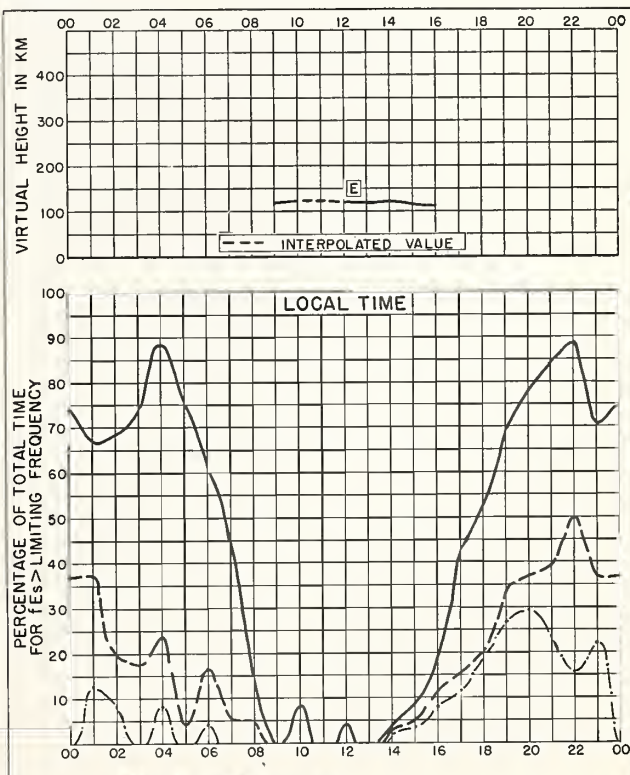


Fig. 8. NARSARSSUAQ, GREENLAND
FEBRUARY 1956

NBS 490

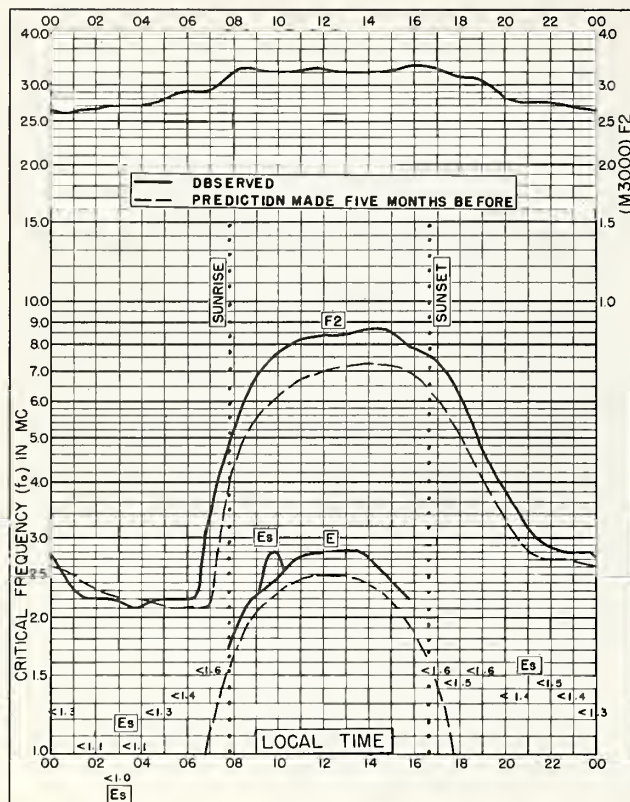


Fig. 9. OSLO, NORWAY
60.0°N, 11.1°E

FEBRUARY 1956

NBS 503

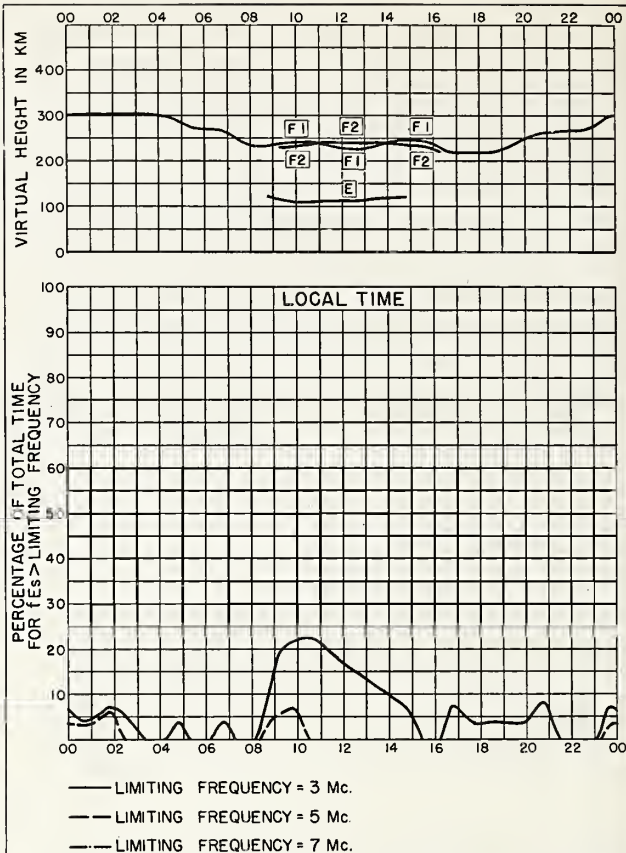


Fig. 10. OSLO, NORWAY

FEBRUARY 1956

NBS 490

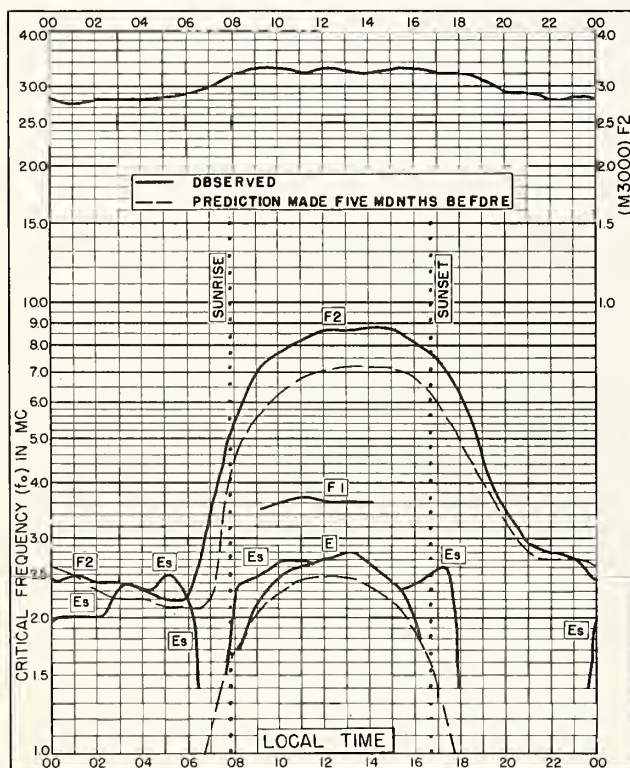


Fig. 11. UPSALA, SWEDEN
59.8°N, 17.6°E

FEBRUARY 1956

NBS 503

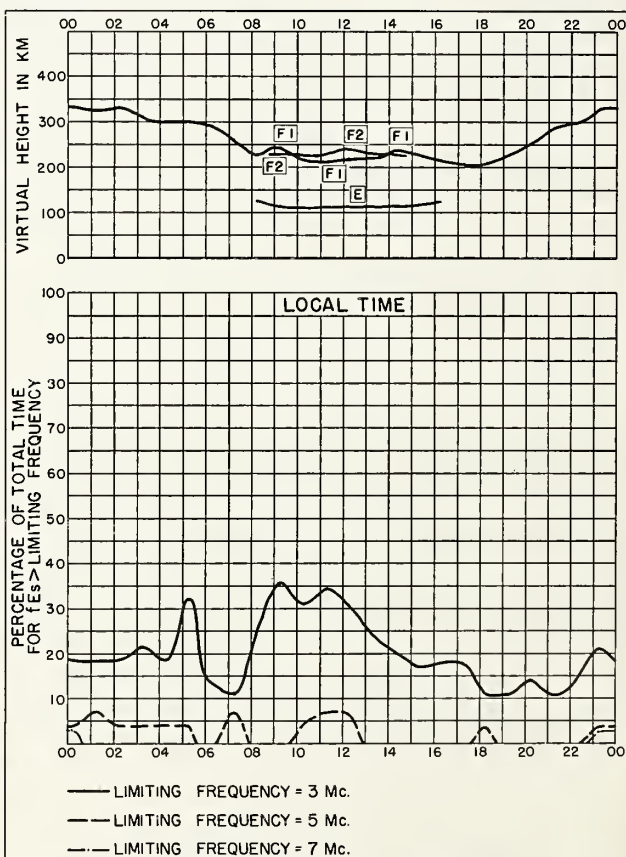


Fig. 12. UPSALA, SWEDEN

FEBRUARY 1956

NBS 490

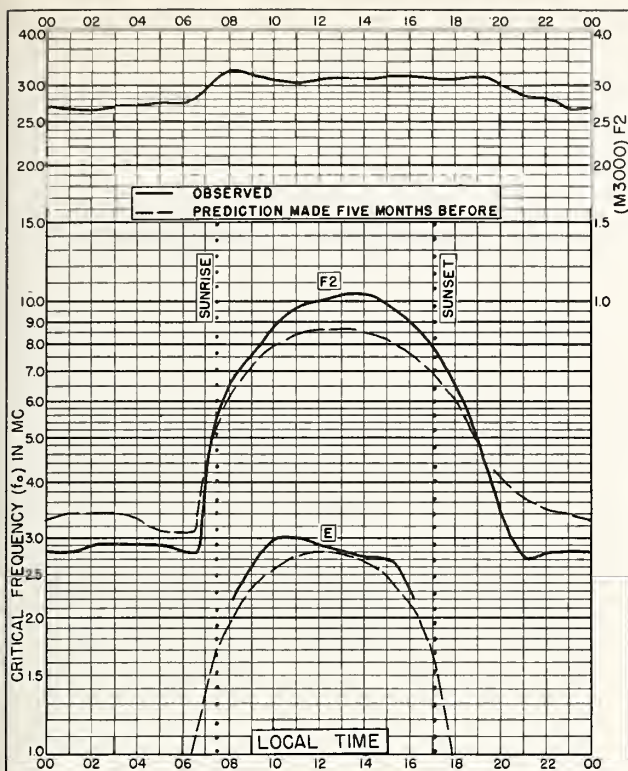


Fig. 13. ADAK, ALASKA
51.9°N, 176.6°W FEBRUARY 1956

NBS 503

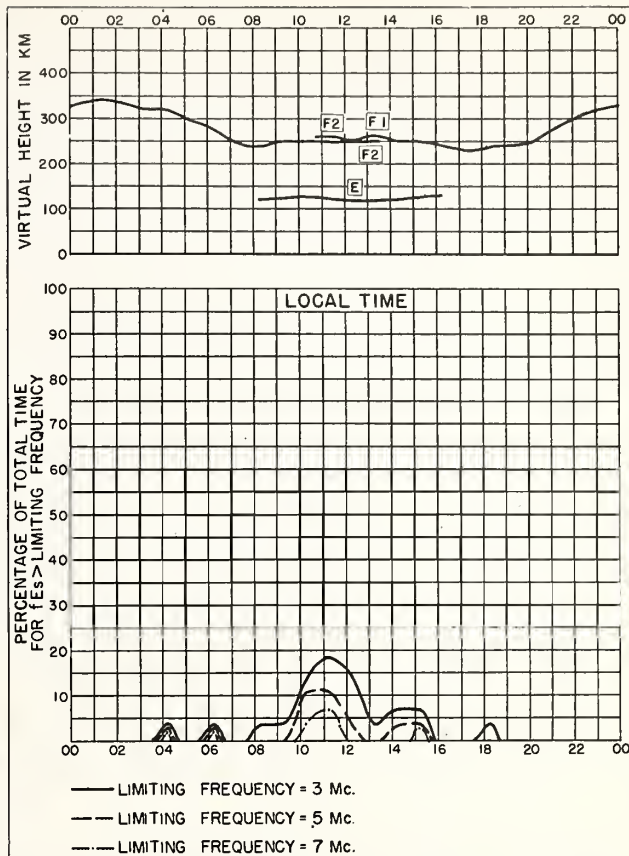


Fig. 14. ADAK, ALASKA FEBRUARY 1956

NBS 490

U. S. DEPARTMENT OF COMMERCE OFFICE OF NAVY

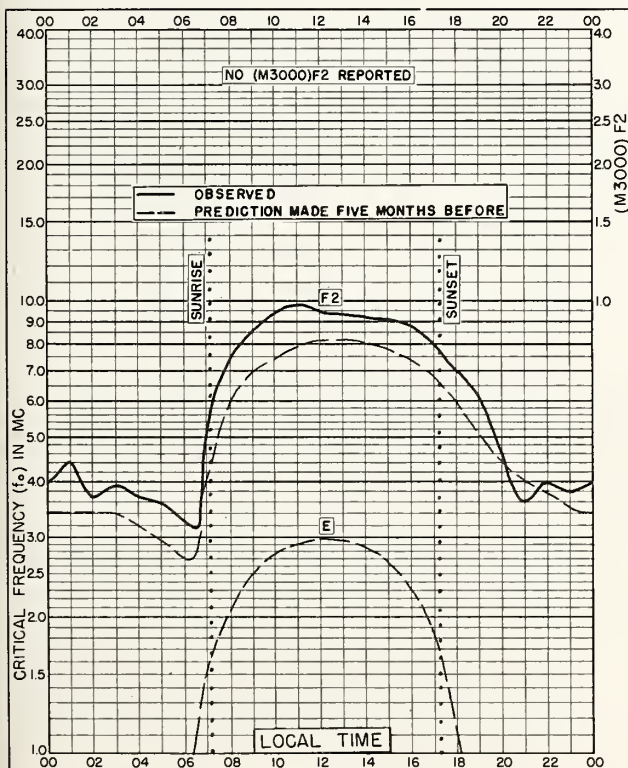


Fig. 15. GRAZ, AUSTRIA
47.1°N, 15.5°E FEBRUARY 1956

NBS 503

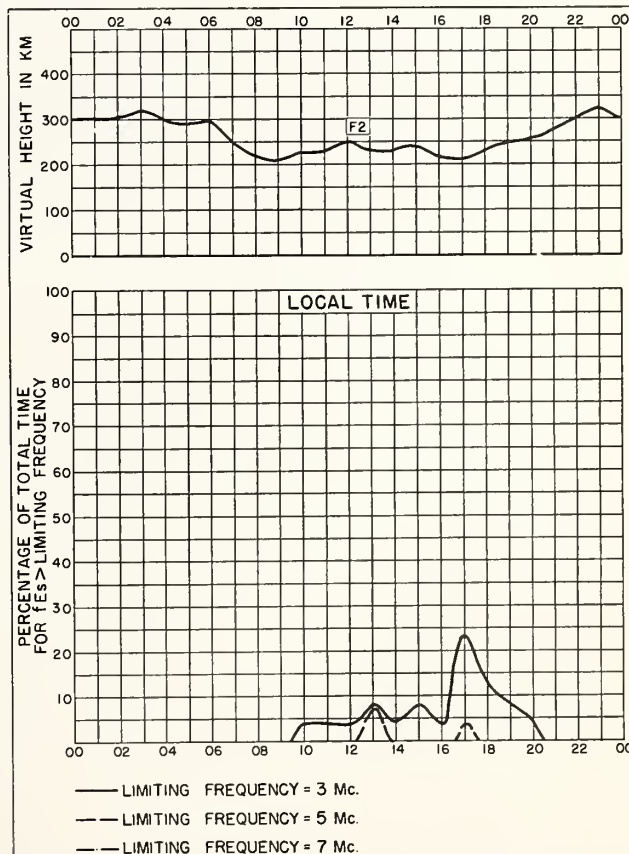


Fig. 16. GRAZ, AUSTRIA FEBRUARY 1956

NBS 490

U. S. DEPARTMENT OF COMMERCE OFFICE OF NAVY

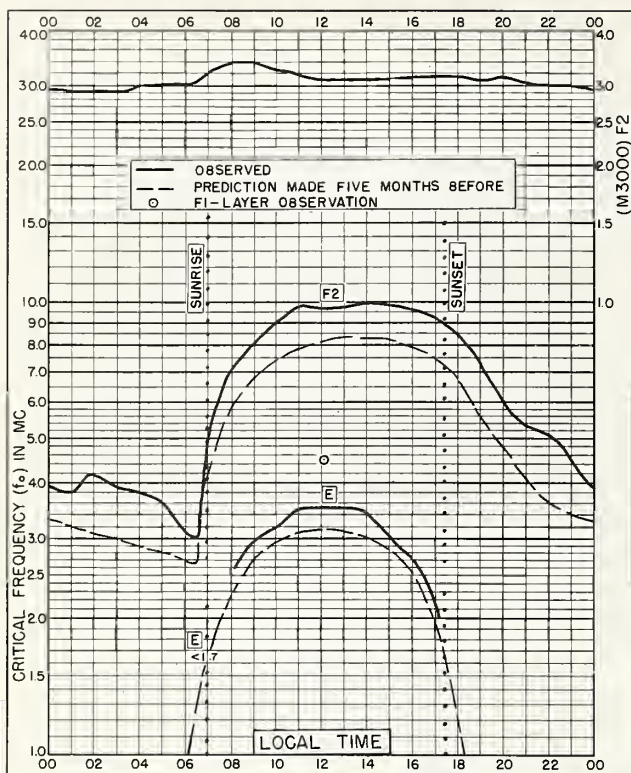


Fig. 17. FT. MONMOUTH, NEW JERSEY
40.3°N, 74.1°W FEBRUARY 1956

NBS 505

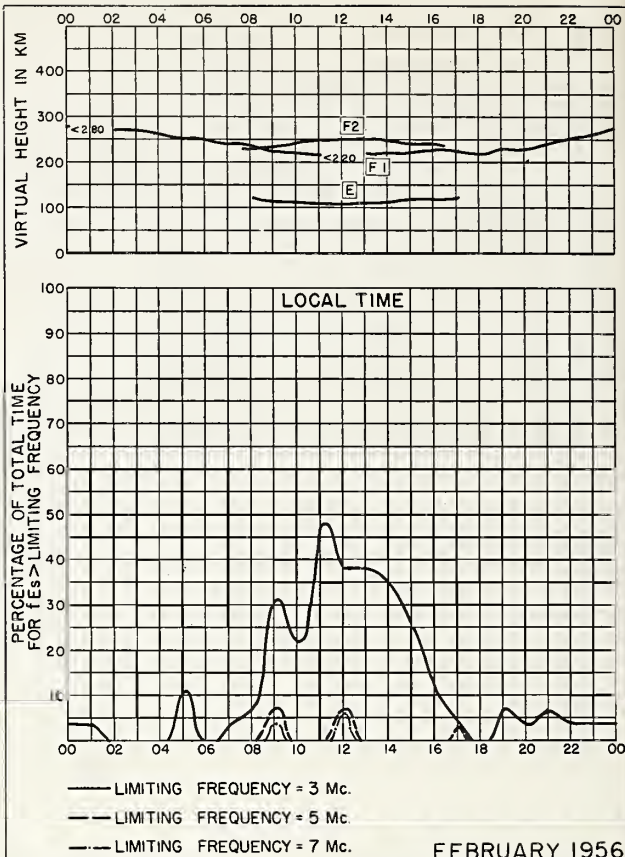


Fig. 18. FT. MONMOUTH, NEW JERSEY
FEBRUARY 1956

NBS 490

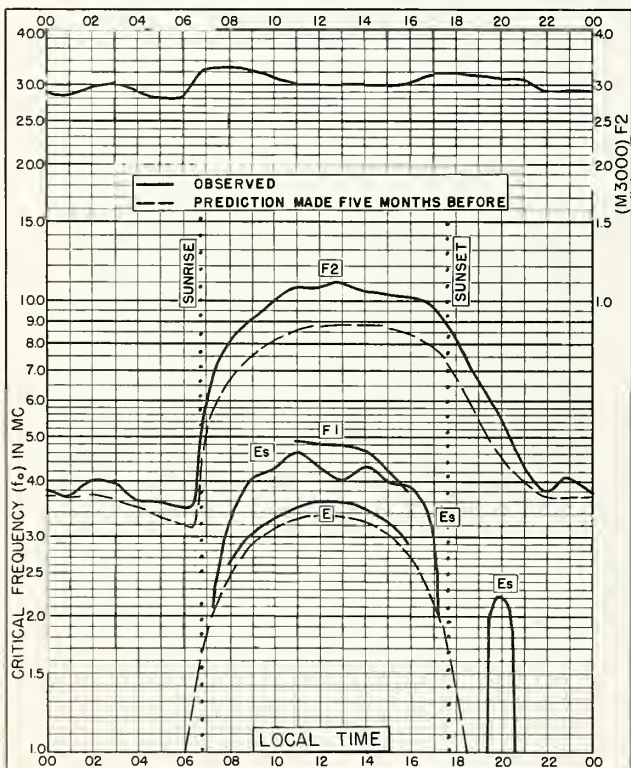


Fig. 19. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W FEBRUARY 1956

NBS 503

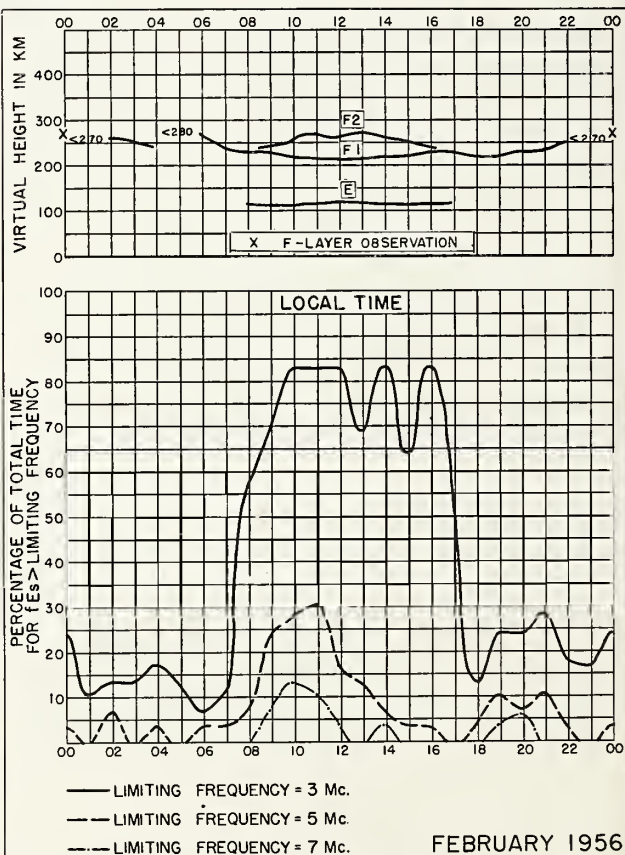


Fig. 20. WHITE SANDS, NEW MEXICO
FEBRUARY 1956

NBS 490

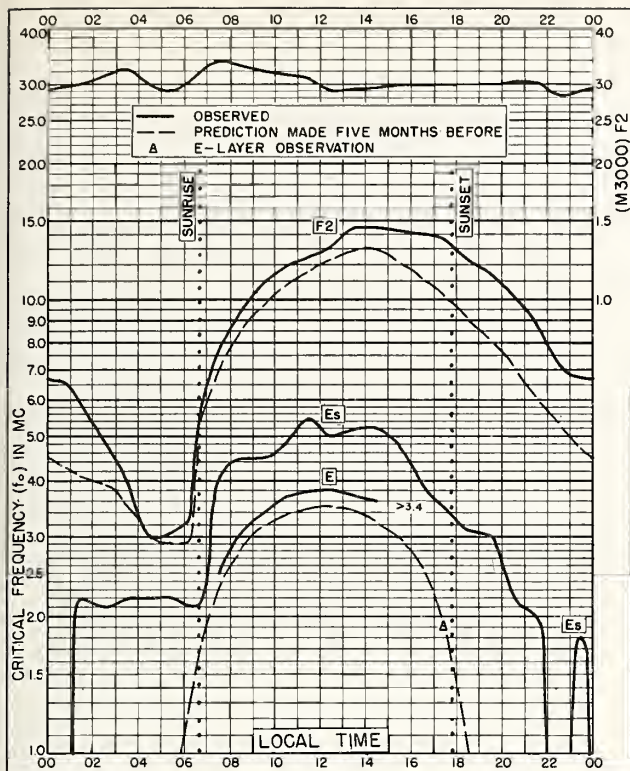


Fig. 21. OKINAWA I.
26.3°N, 127.8°E FEBRUARY 1956

NBS 503

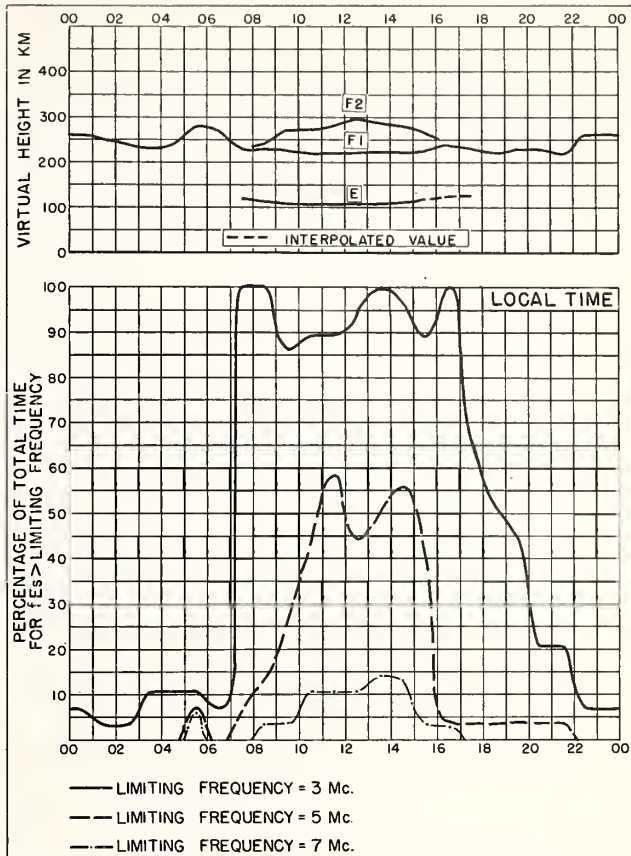


Fig. 22. OKINAWA I. FEBRUARY 1956

NBS 490

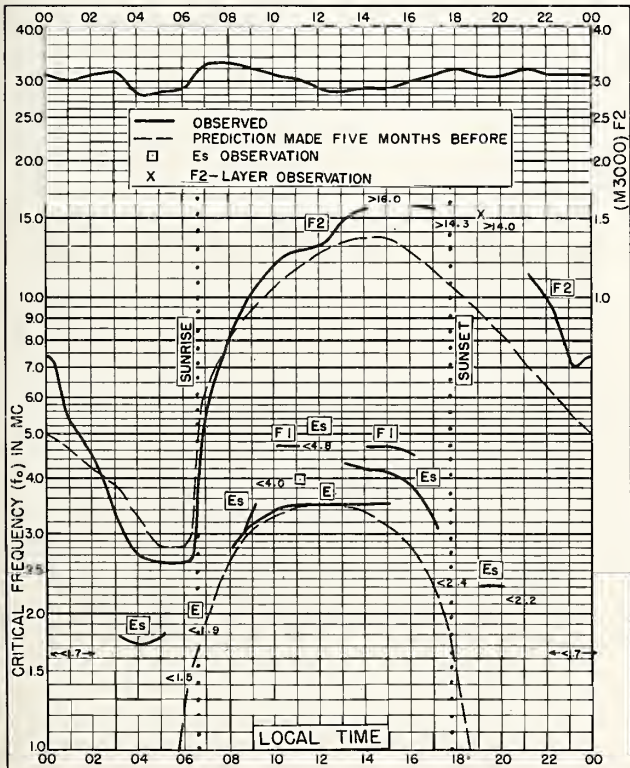


Fig. 23. FORMOSA, CHINA
25.0°N, 121.5°E FEBRUARY 1956

NBS 503

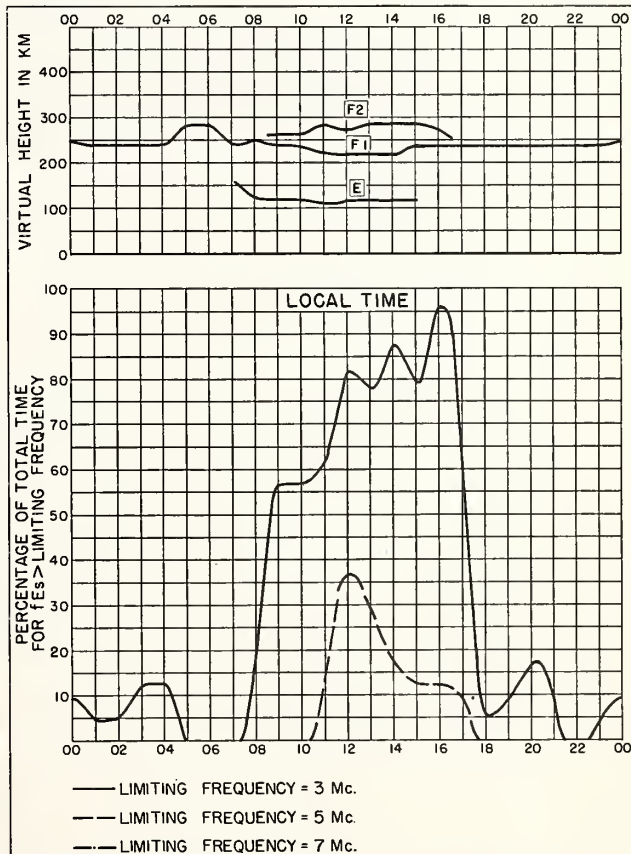


Fig. 24. FORMOSA, CHINA FEBRUARY 1956

NBS 490

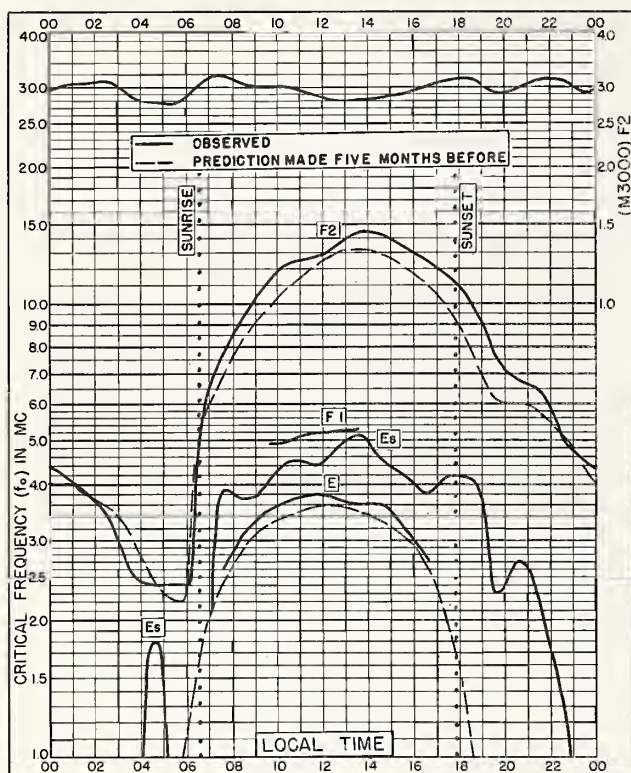


Fig. 25. MAUI, HAWAII
20.8°N, 156.5°W FEBRUARY 1956

NBS 505

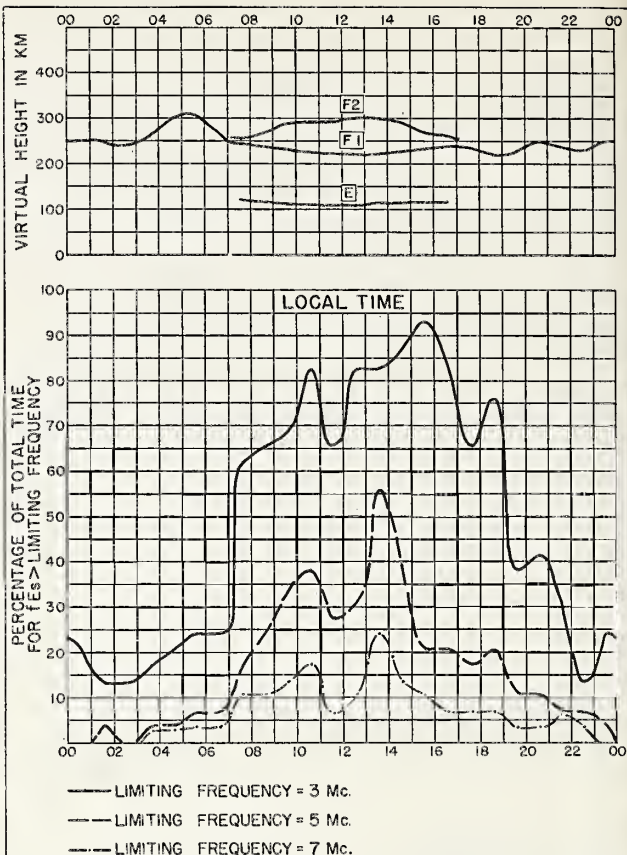


Fig. 26. MAUI, HAWAII FEBRUARY 1956

NBS 490

U. S. GOVERNMENT PRINTING OFFICE: 1955

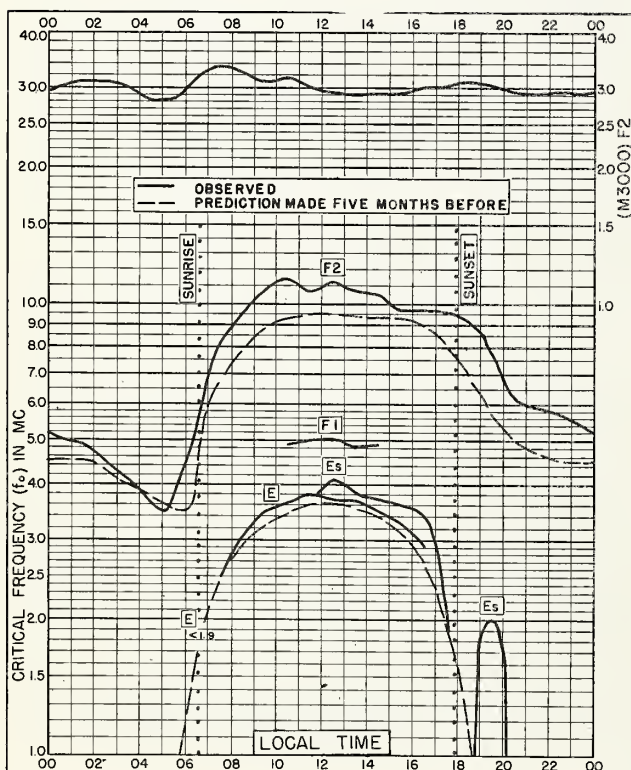


Fig. 27. PUERTO RICO, W. I.
18.5°N, 67.2°W FEBRUARY 1956

NBS 505

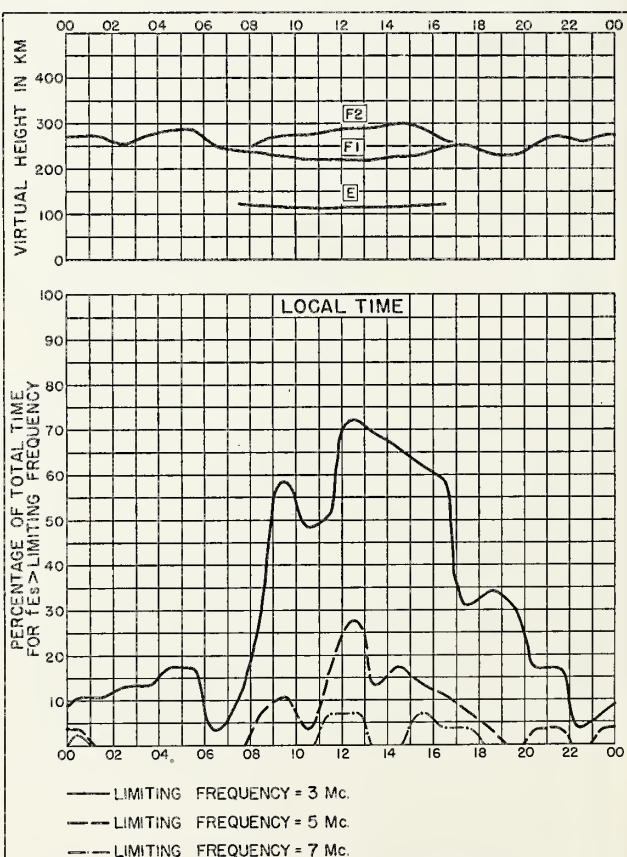


Fig. 28. PUERTO RICO, W. I. FEBRUARY 1956

NBS 490

U. S. GOVERNMENT PRINTING OFFICE: 1955

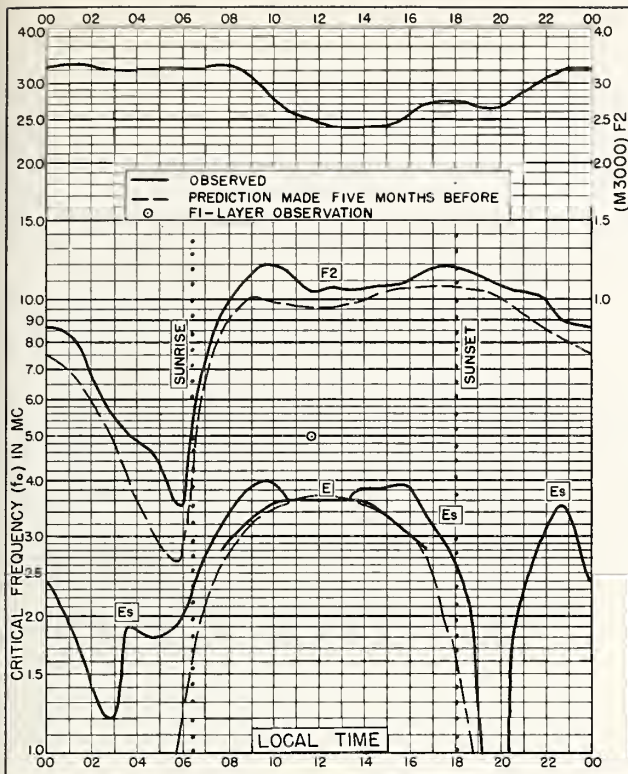


Fig. 29. GUAM I.
13.6°N, 144.9°E FEBRUARY 1956

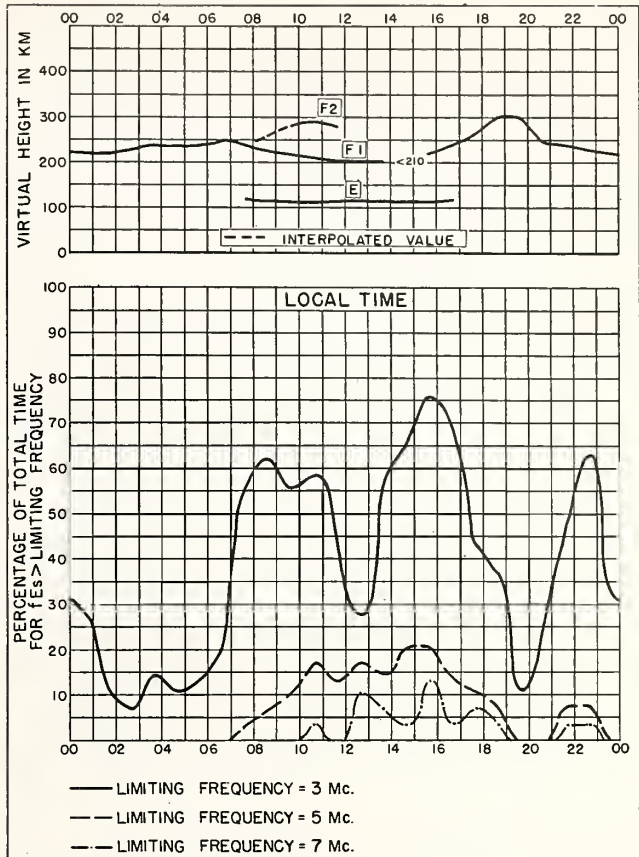


Fig. 30. GUAM I.
NBS 490 FEBRUARY 1956

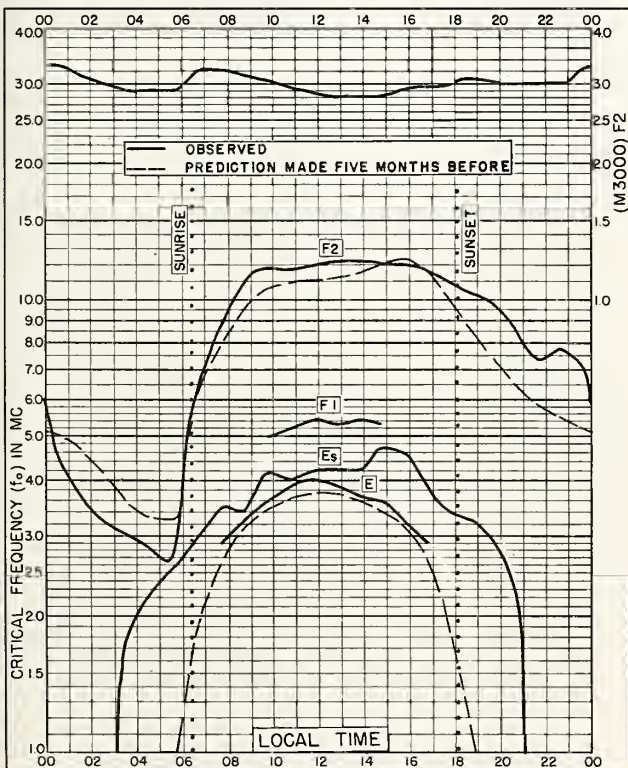


Fig. 31. PANAMA CANAL ZONE
9.4°N, 79.9°W FEBRUARY 1956

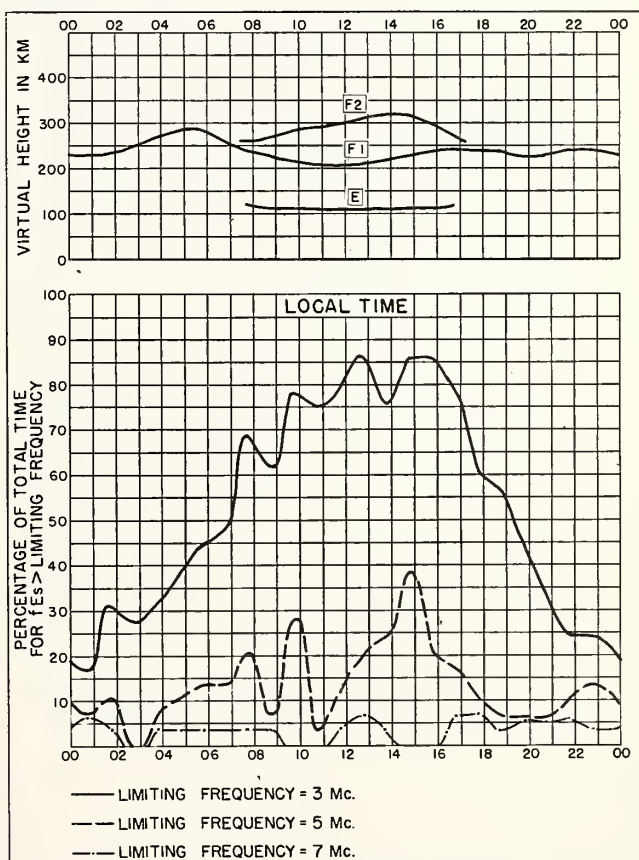


Fig. 32. PANAMA CANAL ZONE FEBRUARY 1956
NBS 490

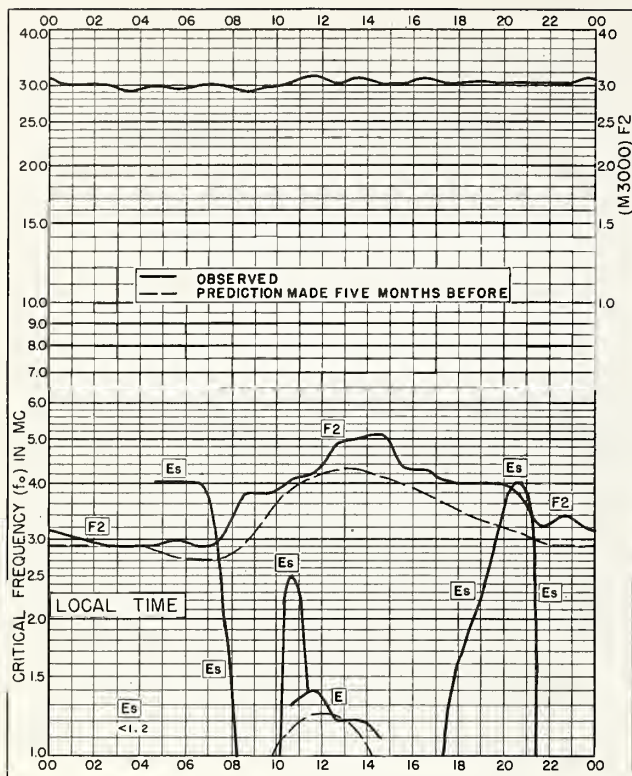


Fig. 33. RESOLUTE BAY, CANADA
74.7°N, 94.9°W JANUARY 1956

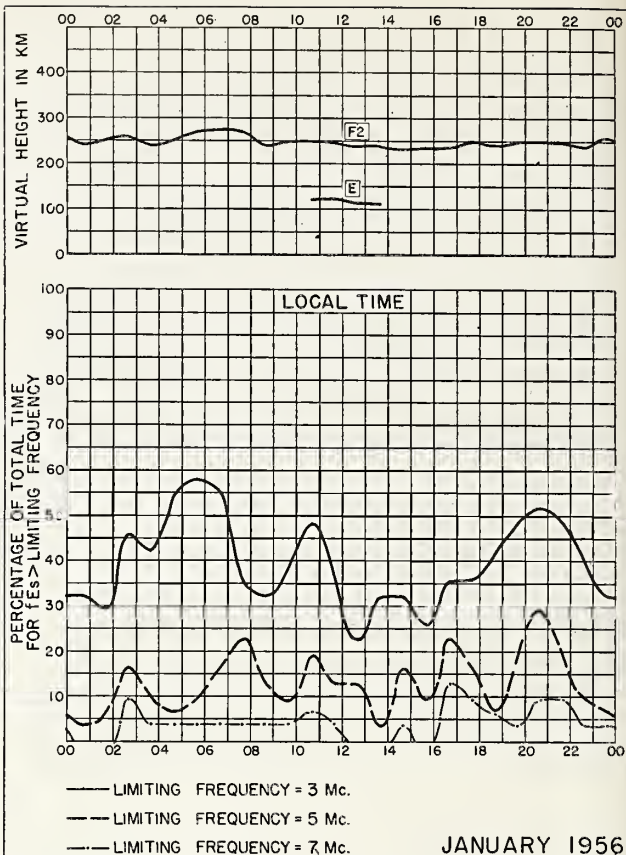


Fig. 34. RESOLUTE BAY, CANADA

NBS 490

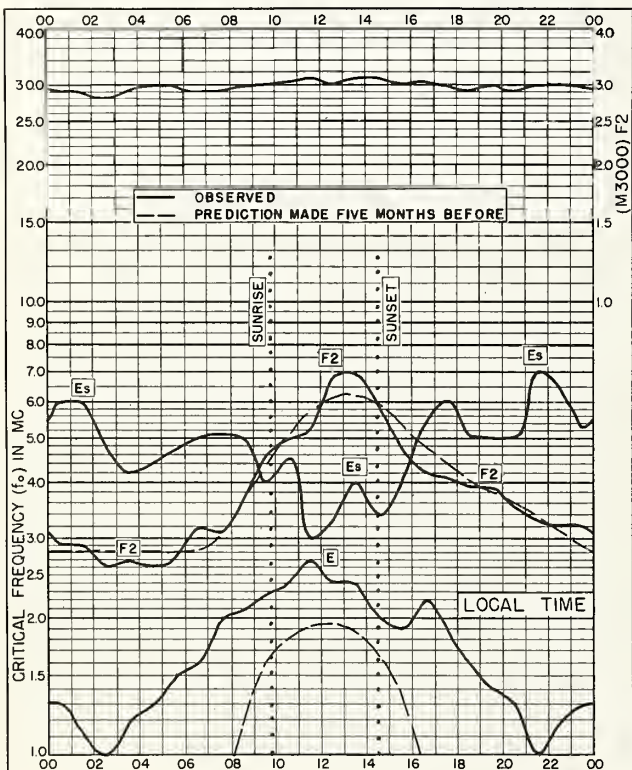


Fig. 35. BAKER LAKE, CANADA
64.3°N, 96.0°W JANUARY 1956

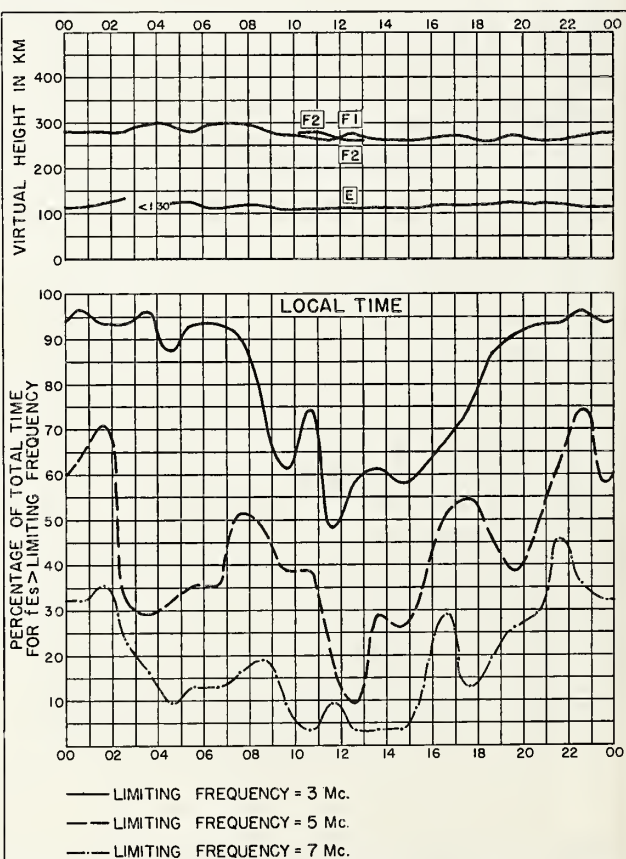


Fig. 36. BAKER LAKE, CANADA JANUARY 1956

NBS 490

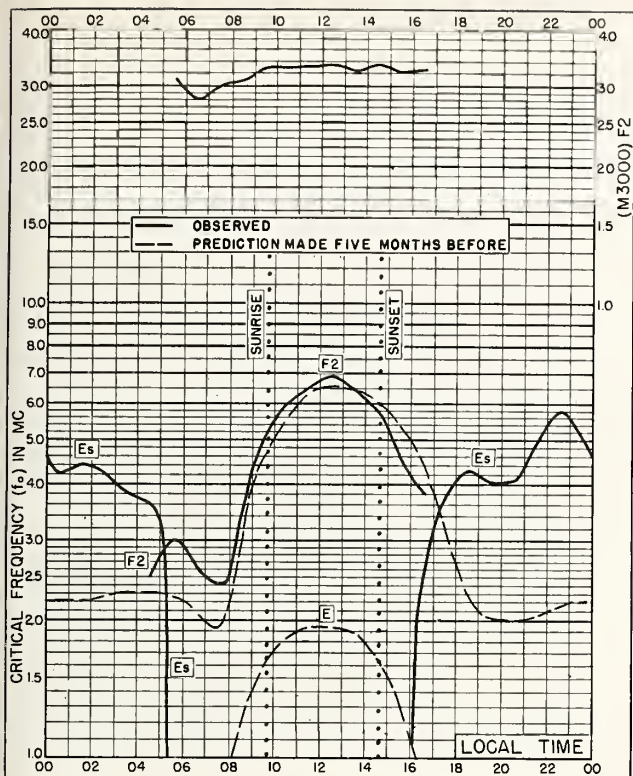


Fig. 37. REYKJAVIK, ICELAND

64.1°N, 21.8°W

JANUARY 1956

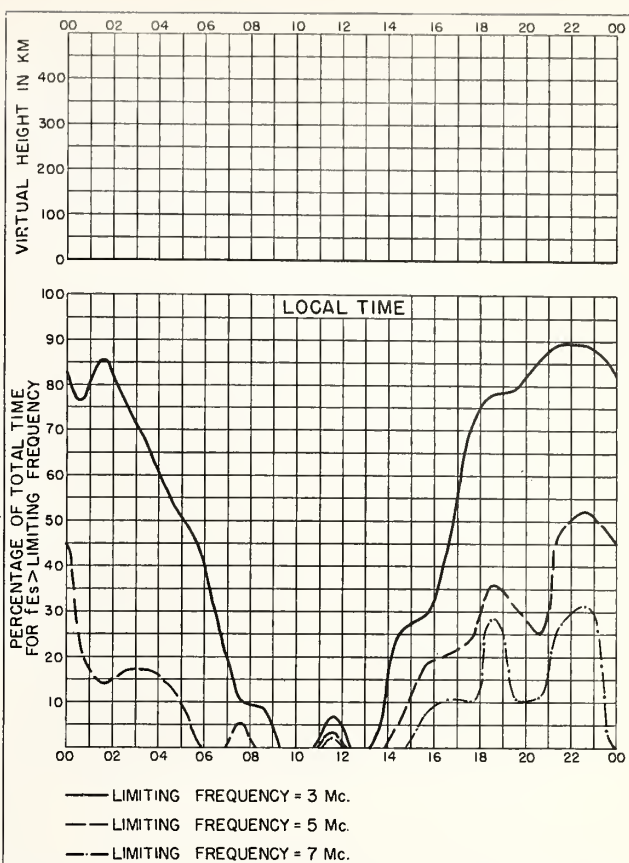


Fig. 38. REYKJAVIK, ICELAND

JANUARY 1956

NBS 490

U. S. GOVERNMENT PRINTING OFFICE: 1957

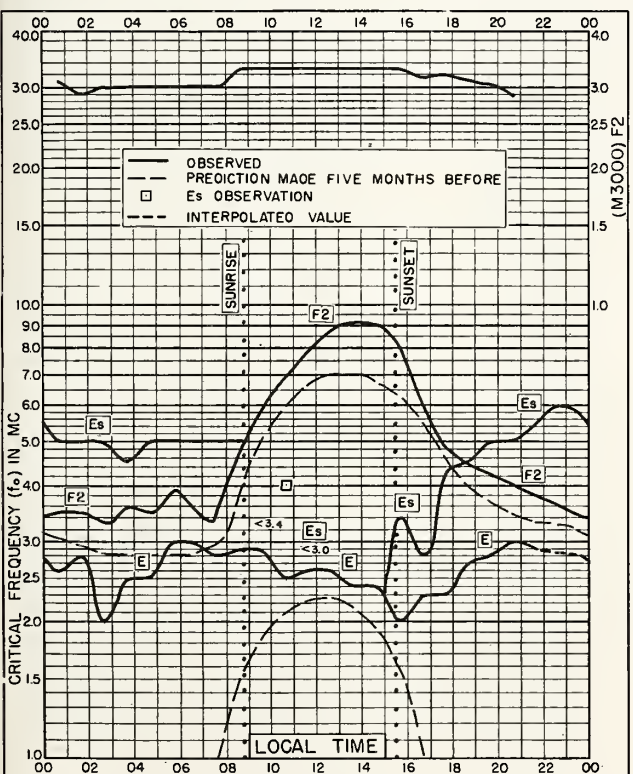


Fig. 39. CHURCHILL, CANADA

58.8°N, 94.2°W

JANUARY 1956

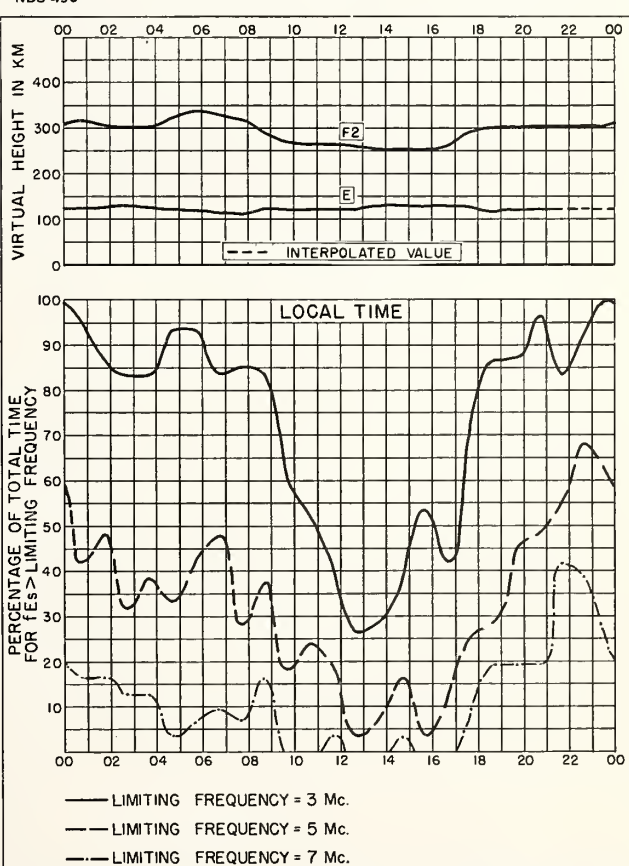


Fig. 40. CHURCHILL, CANADA

JANUARY 1956

NBS 490

U. S. GOVERNMENT PRINTING OFFICE: 1957

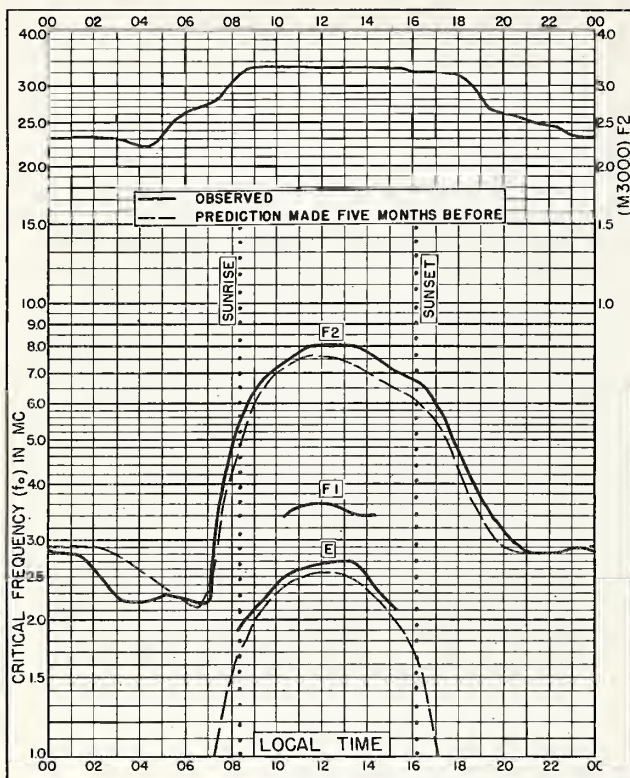


Fig. 41. De BILT, HOLLAND
52.1°N, 5.2°E

JANUARY 1956

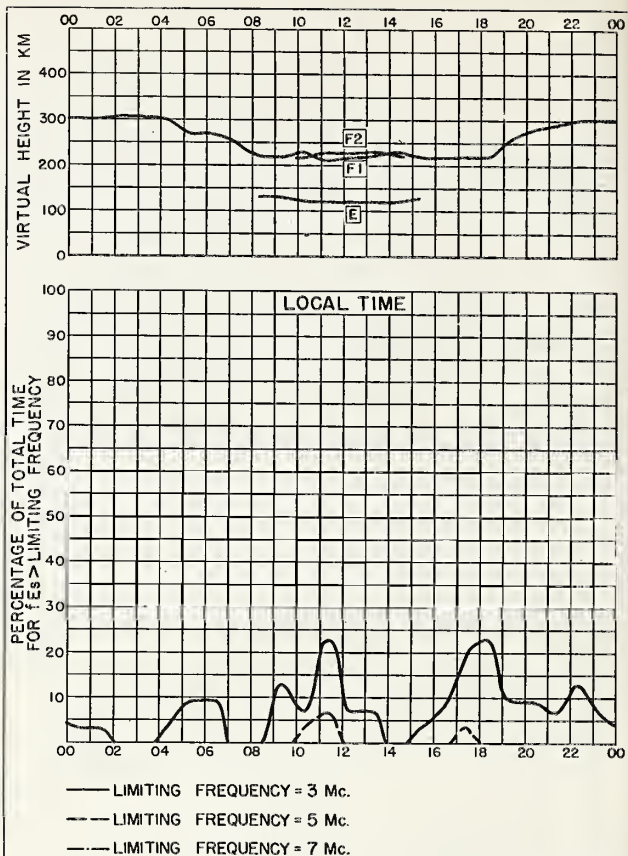


Fig. 42. De BILT, HOLLAND

JANUARY 1956

NBS 490

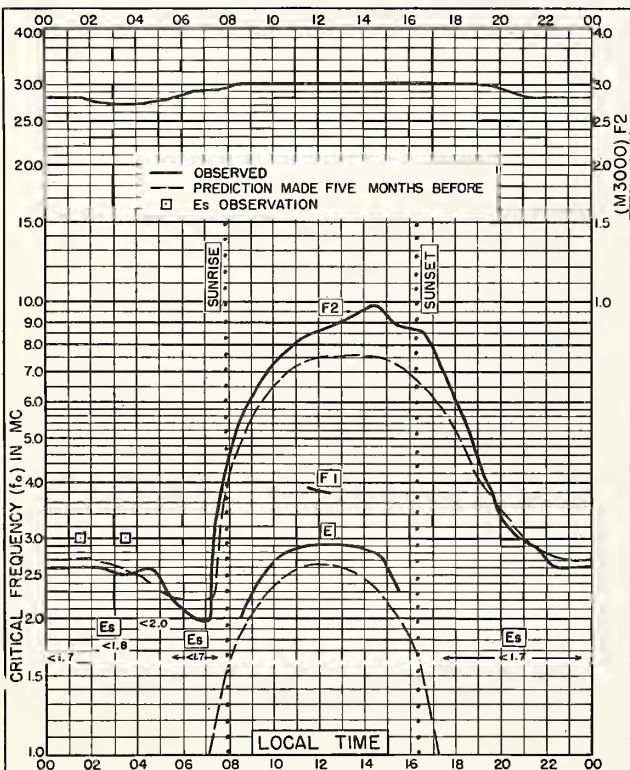


Fig. 43. WINNIPEG, CANADA
49.9°N, 97.4°W

JANUARY 1956

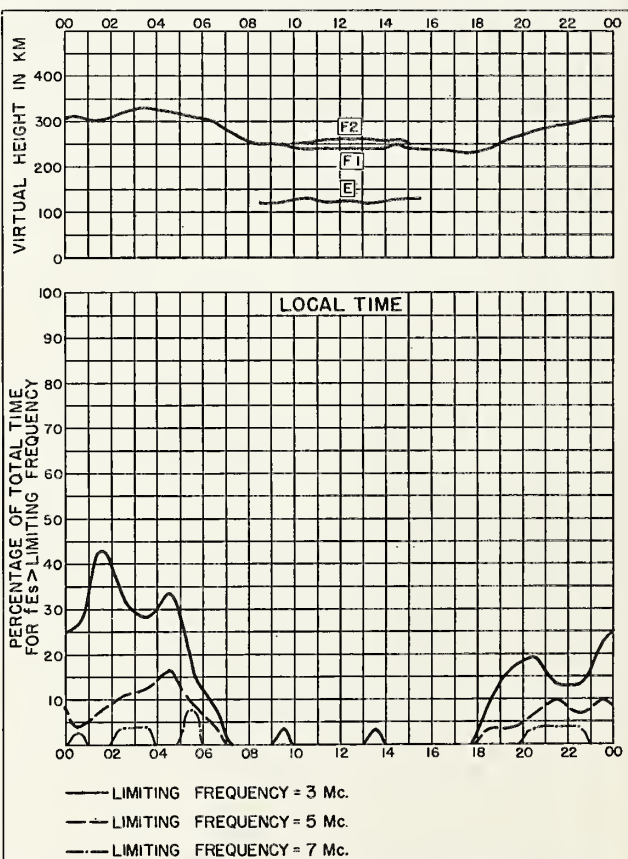


Fig. 44. WINNIPEG, CANADA

JANUARY 1956

NBS 490

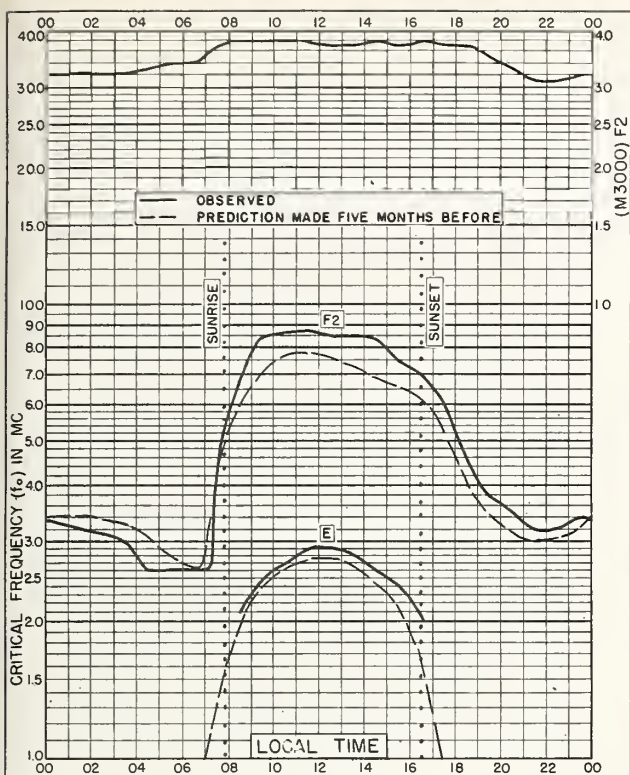


Fig. 45. SCHWARZENBURG, SWITZERLAND
46.8°N, 7.3°E JANUARY 1956

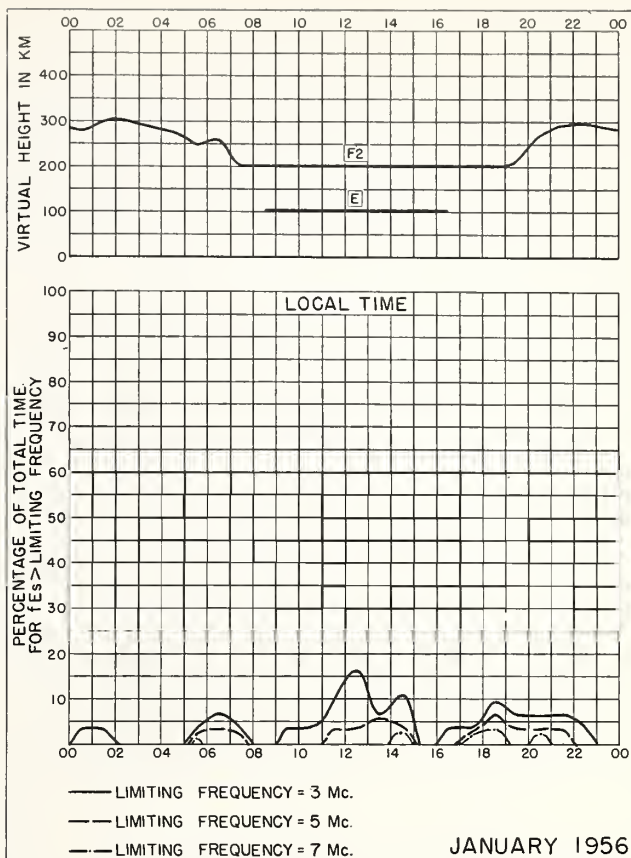


Fig. 46. SCHWARZENBURG, SWITZERLAND

NBS 490

U. S. GOVERNMENT PRINTING OFFICE 312277

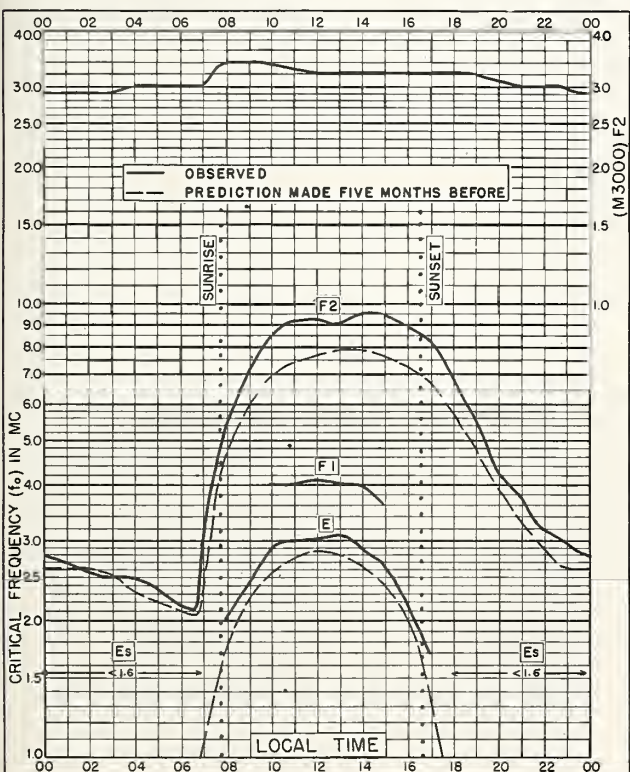


Fig. 47. OTTAWA, CANADA
45.4°N, 75.9°W JANUARY 1956

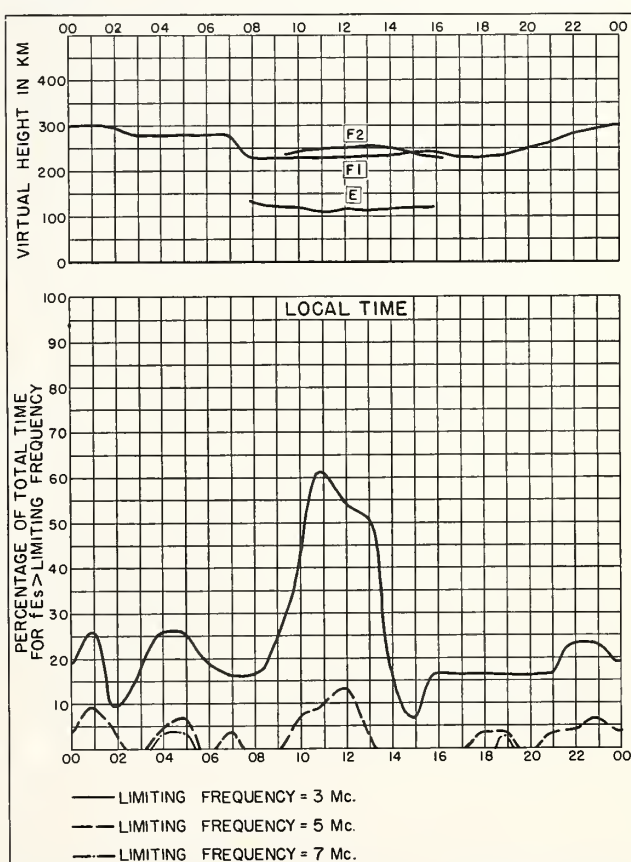


Fig. 48. OTTAWA, CANADA JANUARY 1956

NBS 490

U. S. GOVERNMENT PRINTING OFFICE 312277

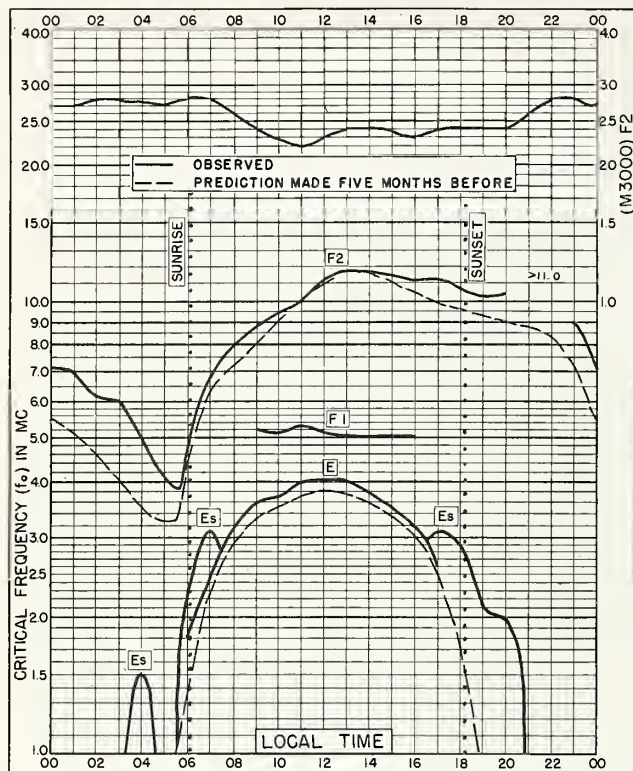


Fig. 49. LEOPOLDVILLE, BELGIAN CONGO
4.4°S, 15.2°E
JANUARY 1956

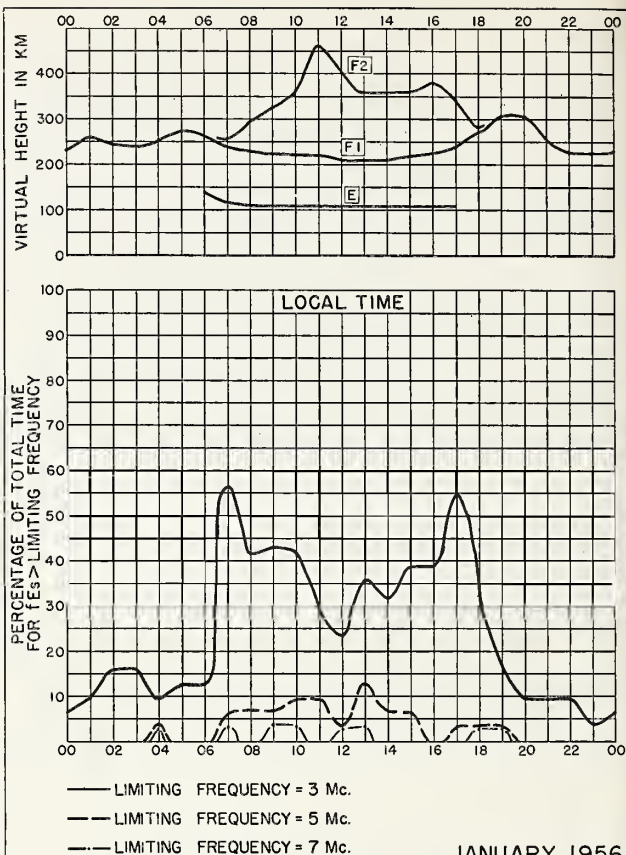


Fig. 50. LEOPOLDVILLE, BELGIAN CONGO
JANUARY 1956

NBS 490

U. S. GOVERNMENT PRINTING OFFICE 16-30271

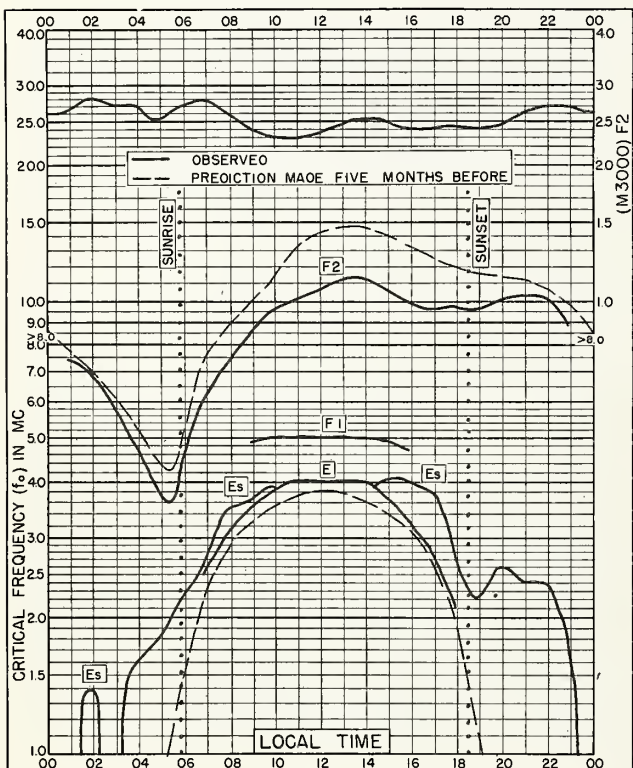


Fig. 51. ELISABETHVILLE, BELGIAN CONGO
11.6°S, 27.5°E
JANUARY 1956

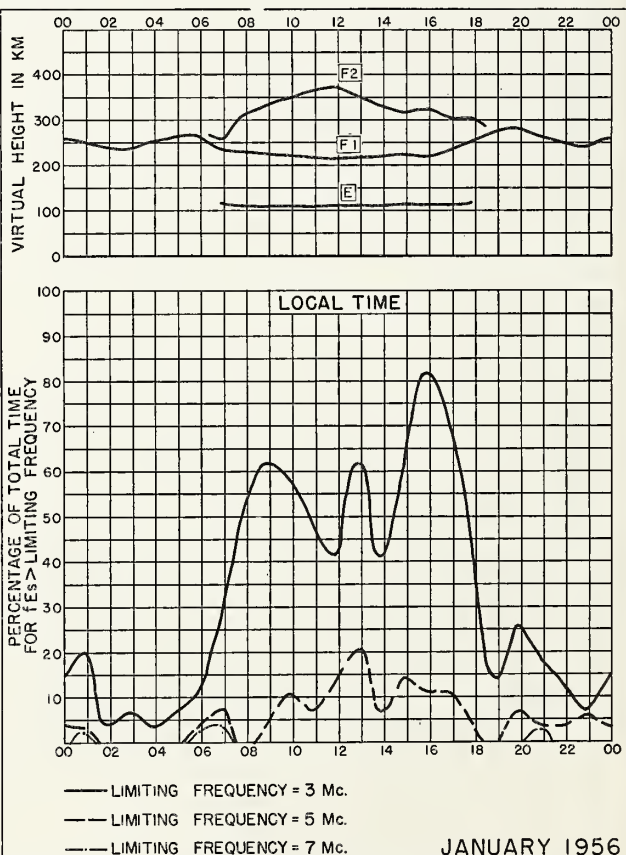


Fig. 52. ELISABETHVILLE, BELGIAN CONGO

NBS 490

U. S. GOVERNMENT PRINTING OFFICE 16-30271

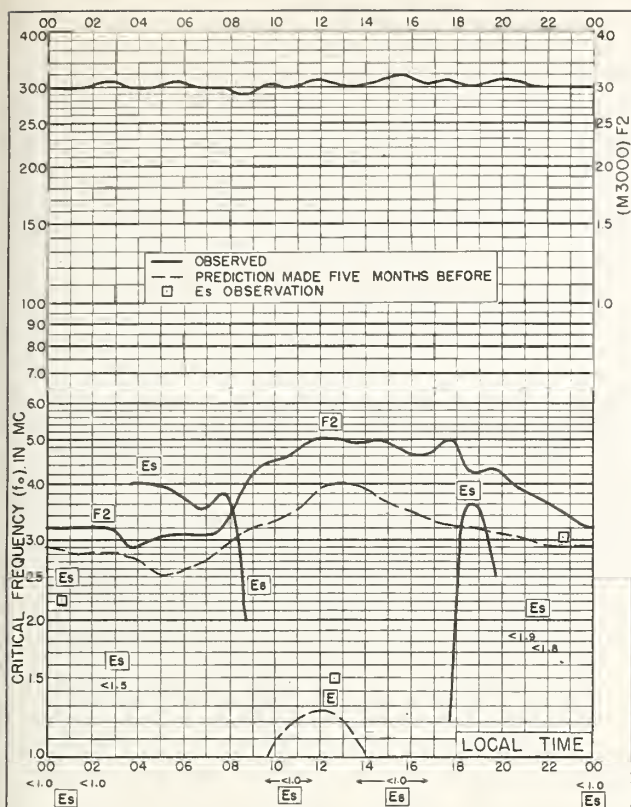


Fig. 53. RESOLUTE BAY, CANADA
74.7°N, 94.9°W DECEMBER 1955

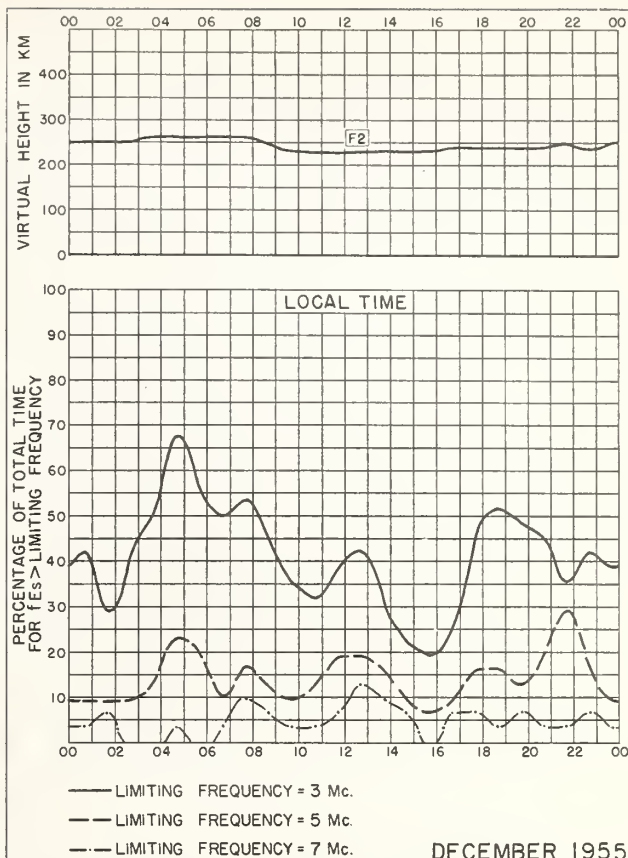


Fig. 54. RESOLUTE BAY, CANADA DECEMBER 1955

NBS 490

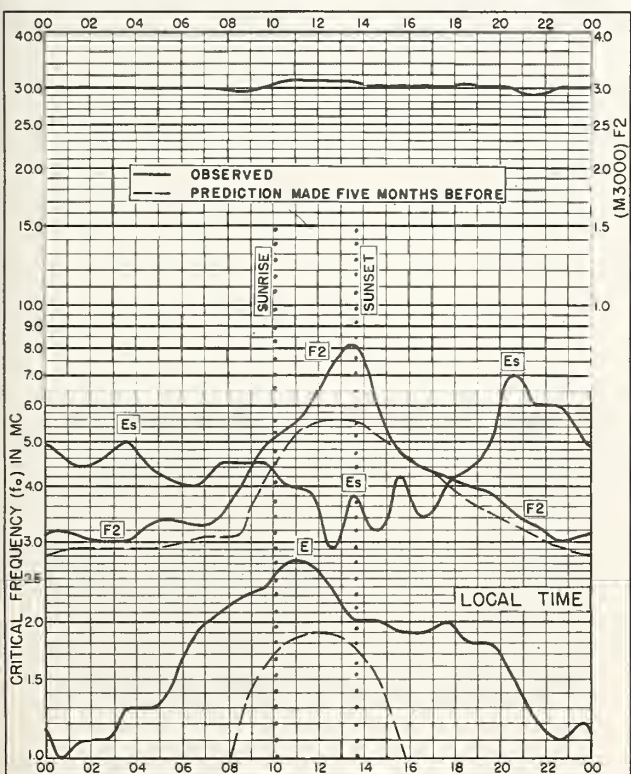


Fig. 55. BAKER LAKE, CANADA
64.3°N, 96.0°W DECEMBER 1955

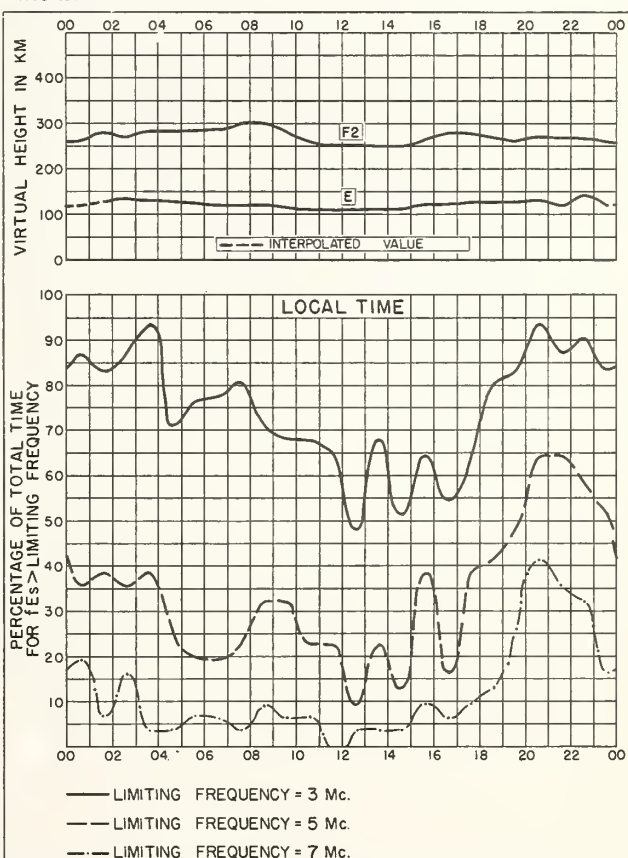


Fig. 56. BAKER LAKE, CANADA DECEMBER 1955

NBS 490

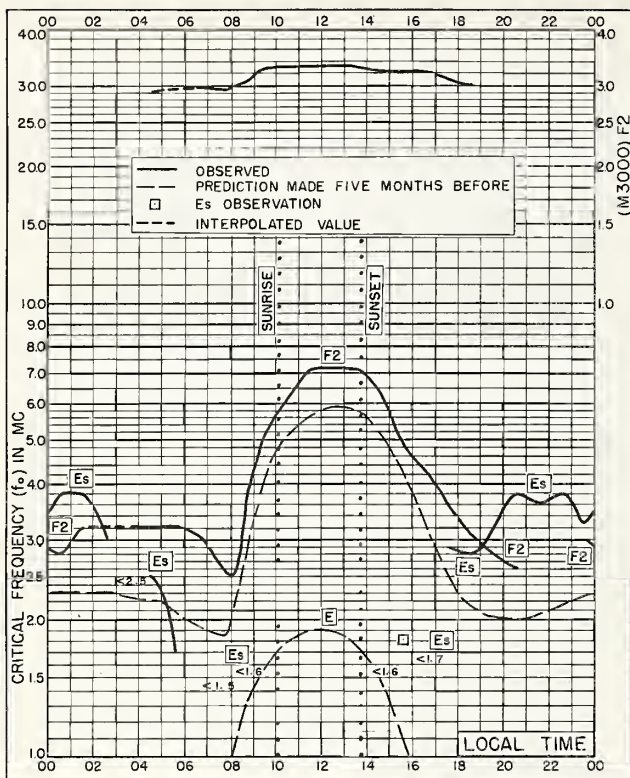


Fig. 57. REYKJAVIK, ICELAND

64.1°N, 21.8°W

DECEMBER 1955

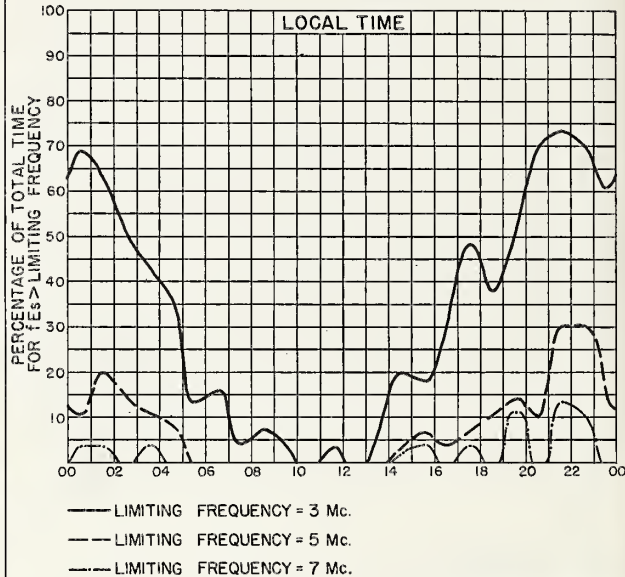
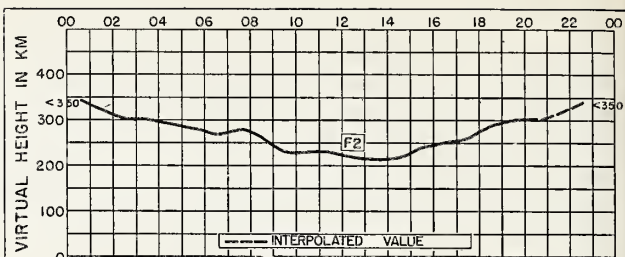


Fig. 58. REYKJAVIK, ICELAND

DECEMBER 1955

NBS 490

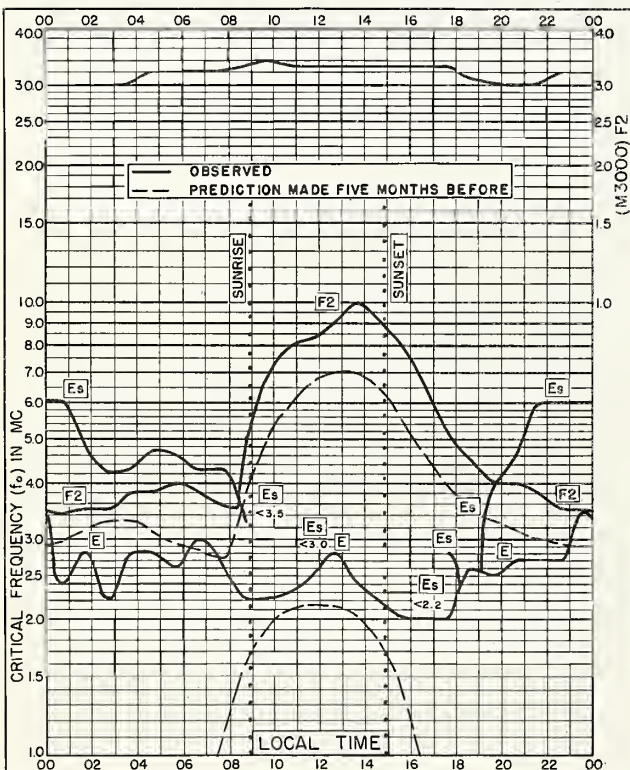


Fig. 59. CHURCHILL, CANADA

58.8°N, 94.2°W

DECEMBER 1955

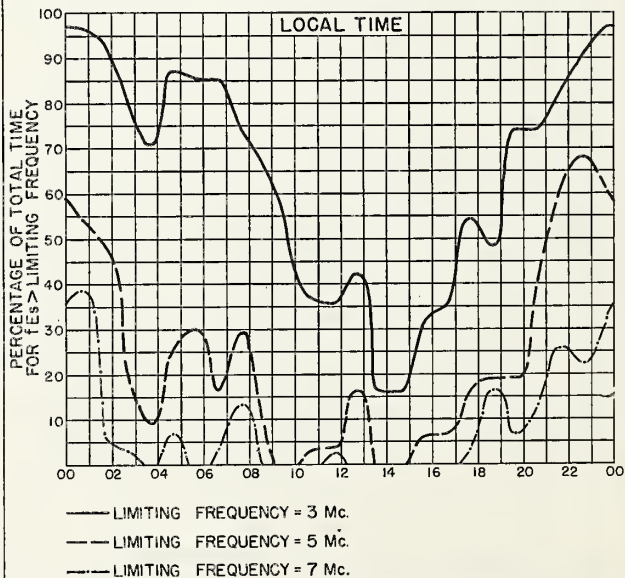
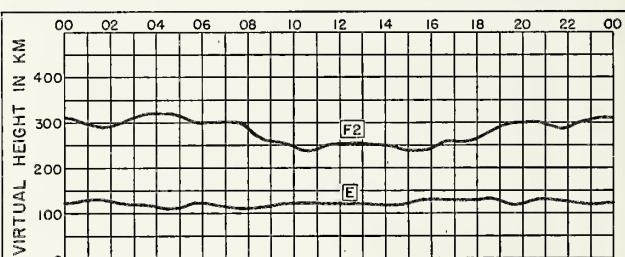


Fig. 60. CHURCHILL, CANADA

DECEMBER 1955

NBS 490

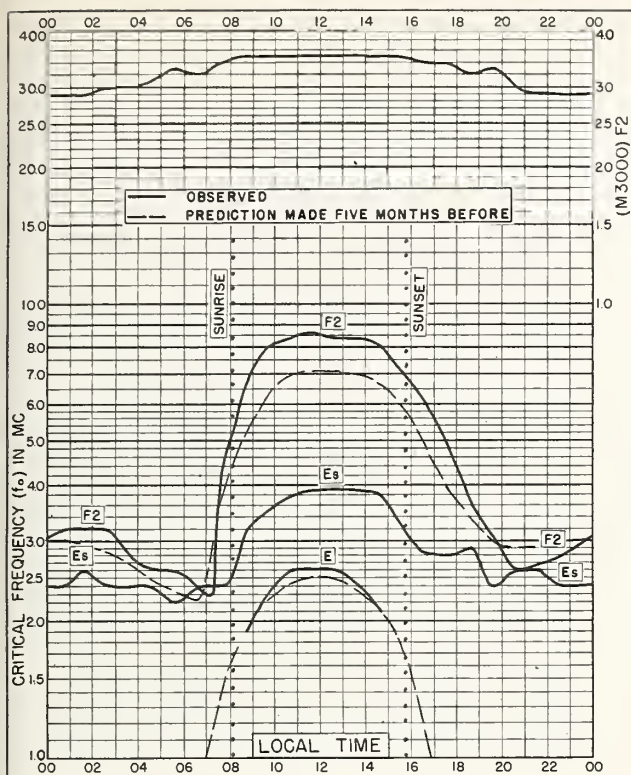


Fig. 61. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E
DECEMBER 1955

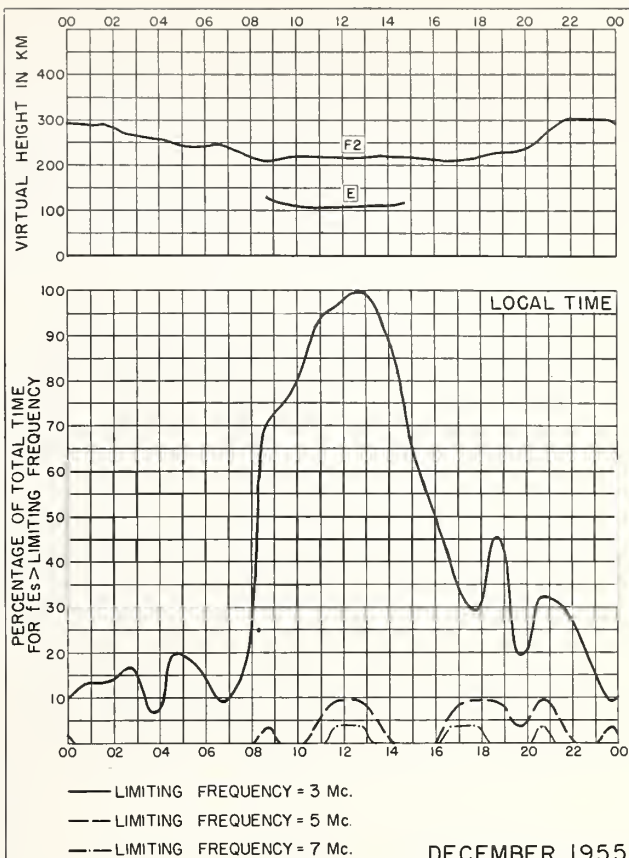


Fig. 62. LINDAU/HARZ, GERMANY
DECEMBER 1955

NBS 490

U. S. GOVERNMENT PRINTING OFFICE: 1957

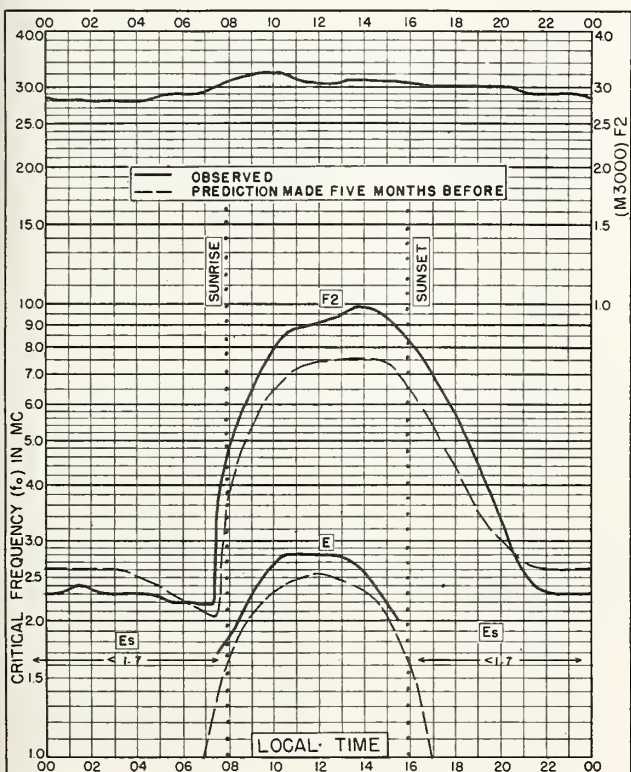


Fig. 63. WINNIPEG, CANADA
49.9°N, 97.4°W
DECEMBER 1955

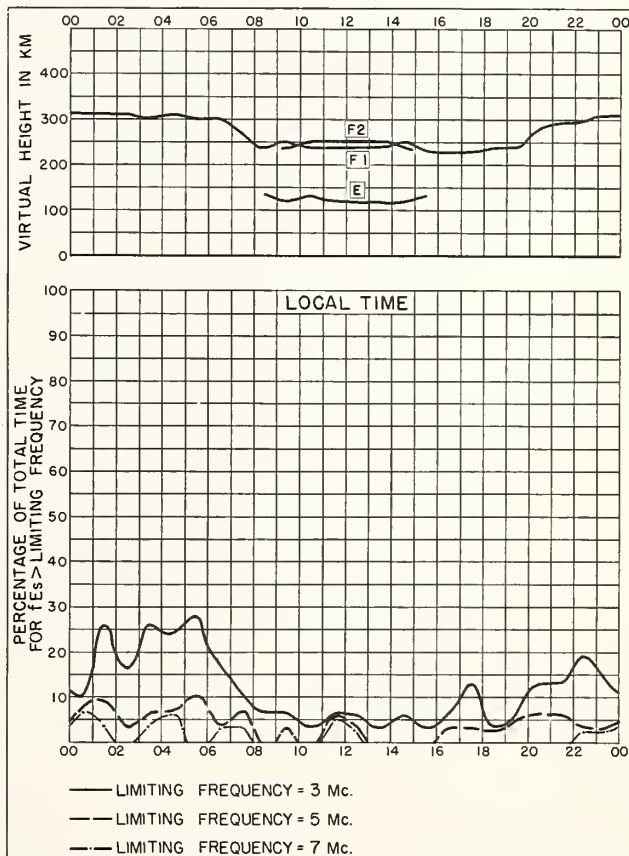


Fig. 64. WINNIPEG, CANADA
DECEMBER 1955

NBS 490

U. S. GOVERNMENT PRINTING OFFICE: 1957

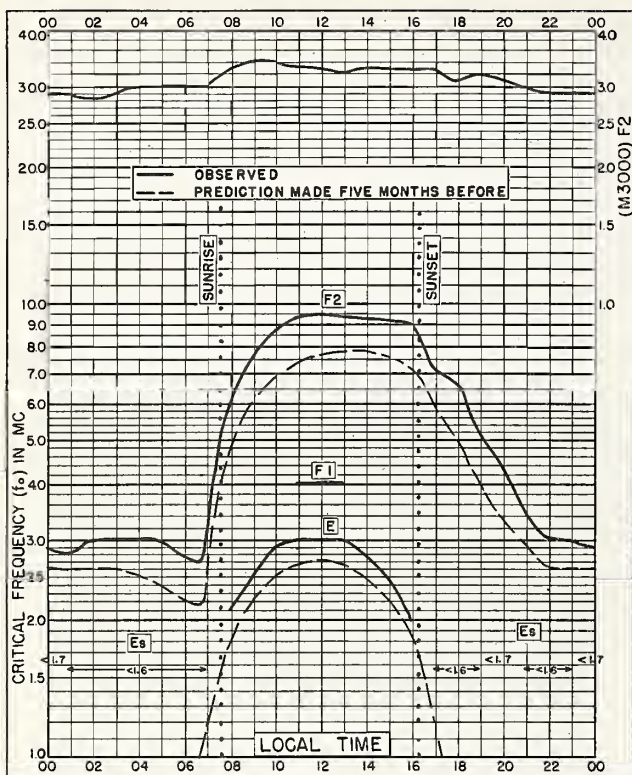


Fig. 65. OTTAWA, CANADA
45.4°N, 75.9°W

DECEMBER 1955

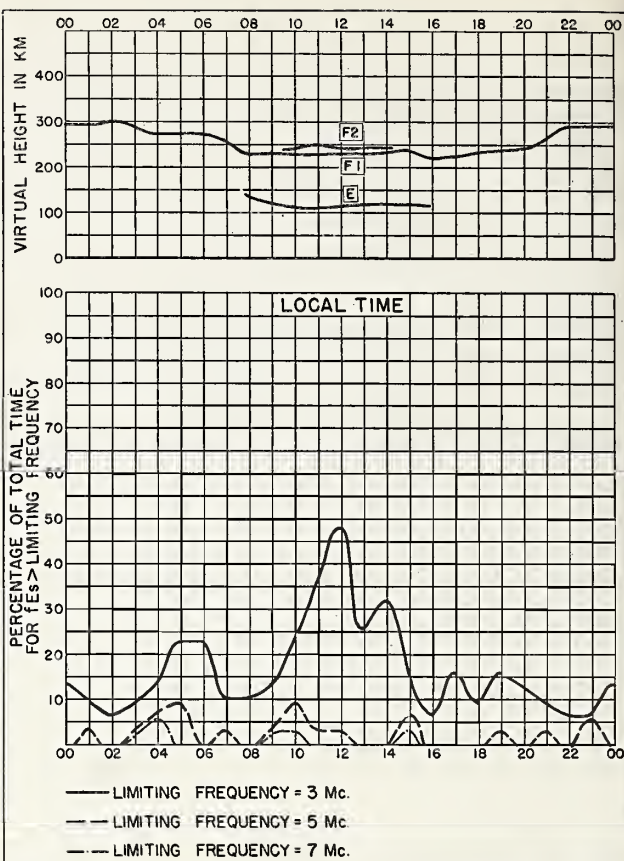


Fig. 66. OTTAWA, CANADA

DECEMBER 1955

NBS 490

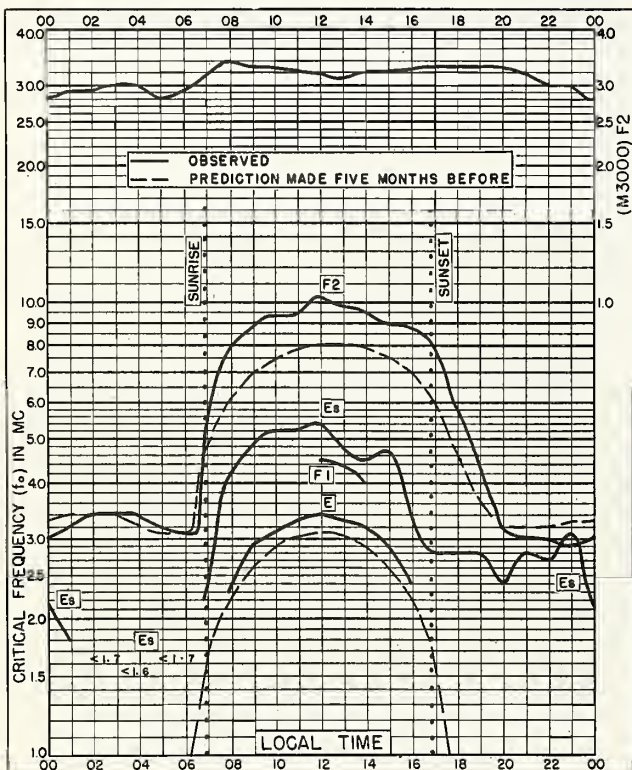


Fig. 67. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W

DECEMBER 1955

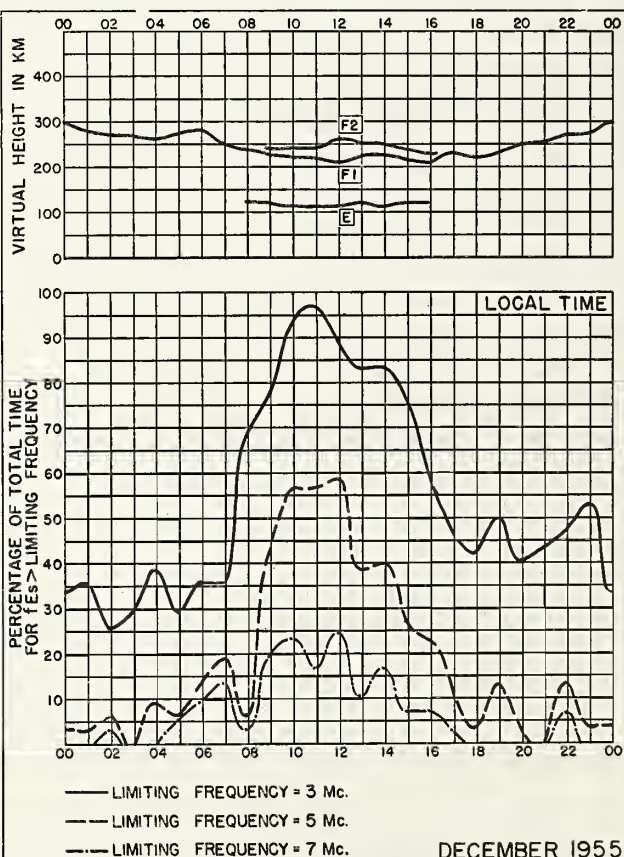


Fig. 68. WHITE SANDS, NEW MEXICO

DECEMBER 1955

NBS 490

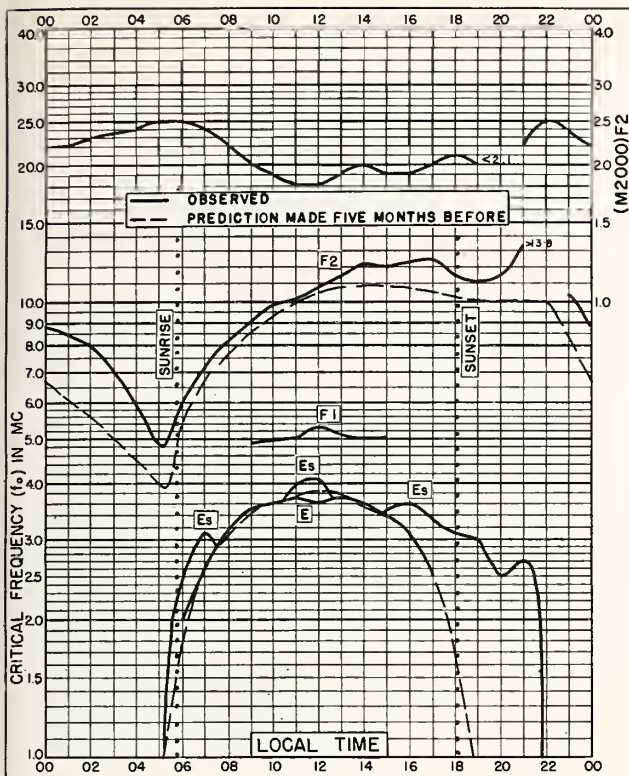


Fig. 69. LEOPOLDVILLE, BELGIAN CONGO
4.4°S, 15.2°E
DECEMBER 1955

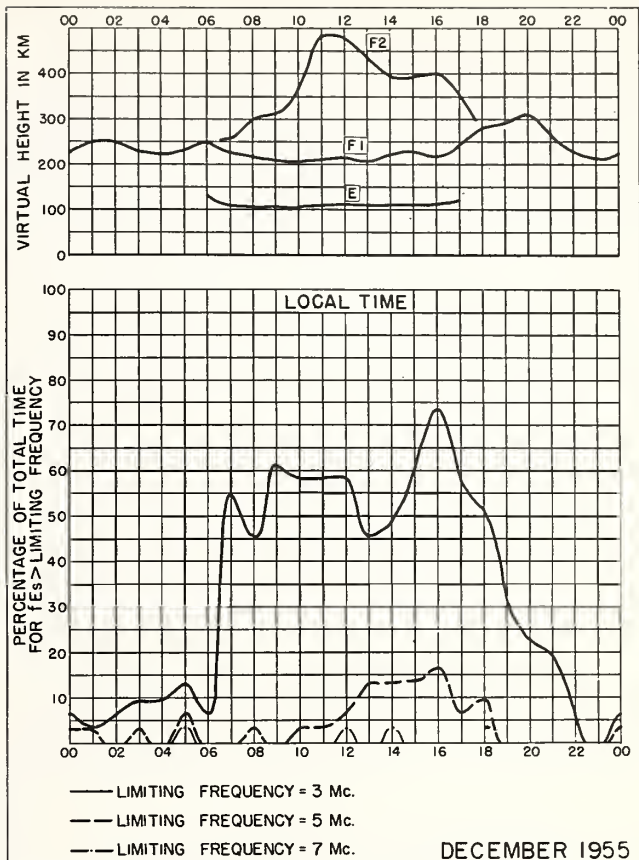


Fig. 70. LEOPOLDVILLE, BELGIAN CONGO
DECEMBER 1955

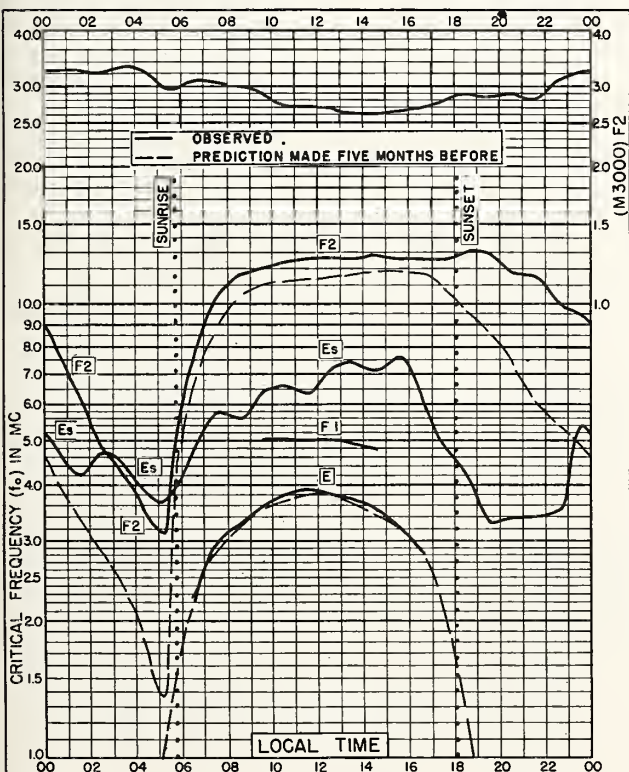


Fig. 71. TALARA, PERU
4.6°S, 81.3°W
DECEMBER 1955

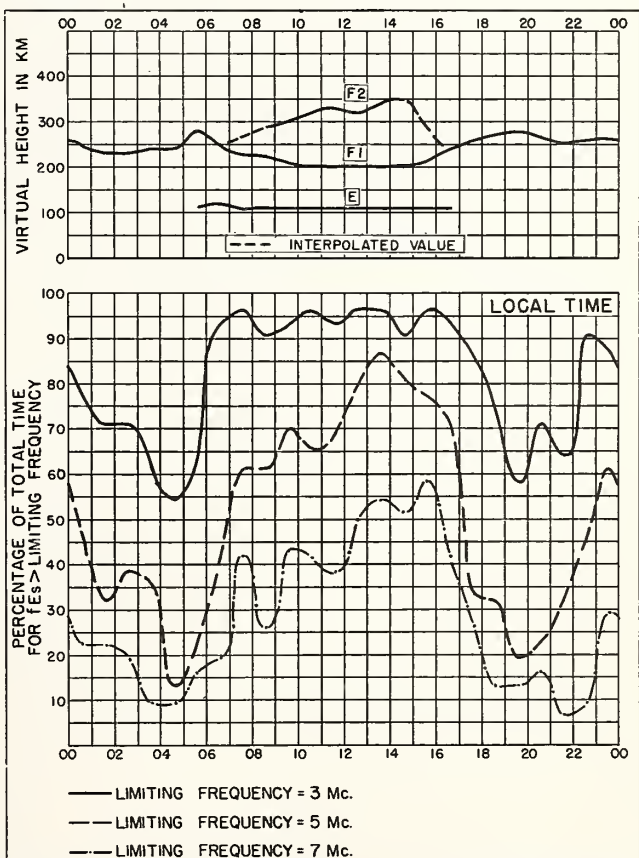


Fig. 72. TALARA, PERU
DECEMBER 1955

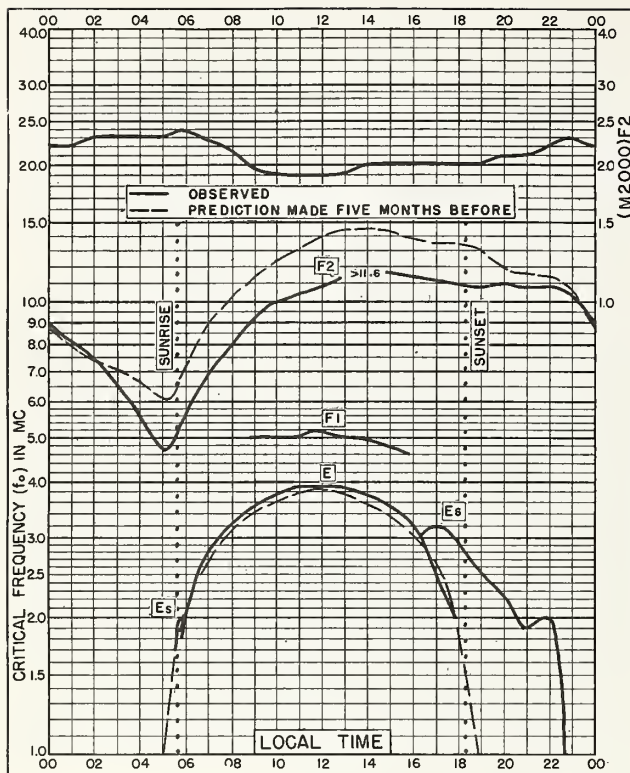


Fig. 73. ELISABETHVILLE, BELGIAN CONGO
11.6°S, 27.5°E DECEMBER 1955

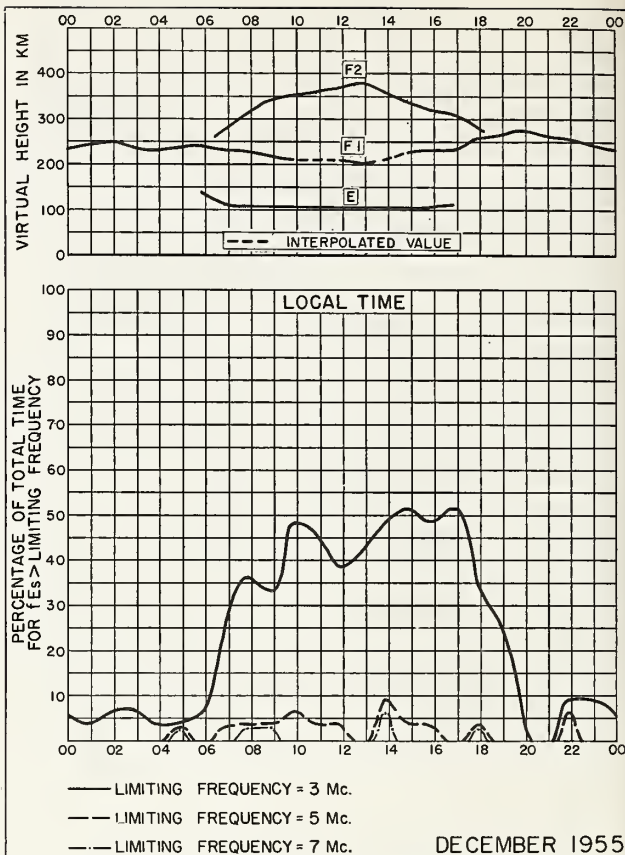


Fig. 74. ELISABETHVILLE, BELGIAN CONGO

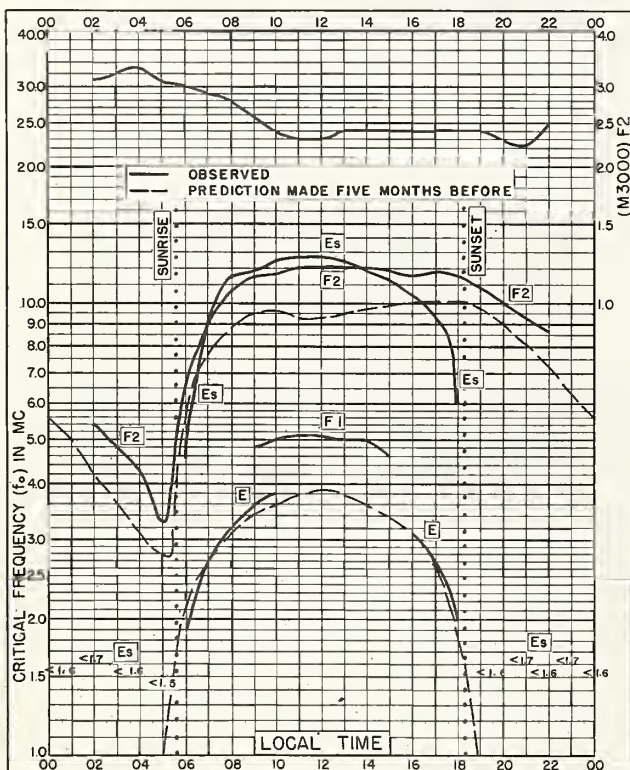


Fig. 75. HUANCAYO, PERU
12.0°S, 75.3°W DECEMBER 1955

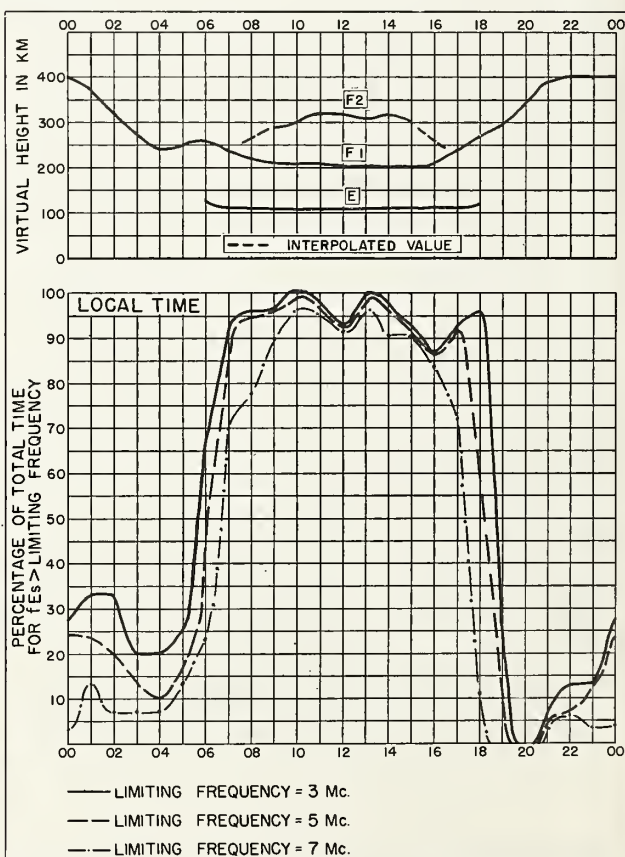
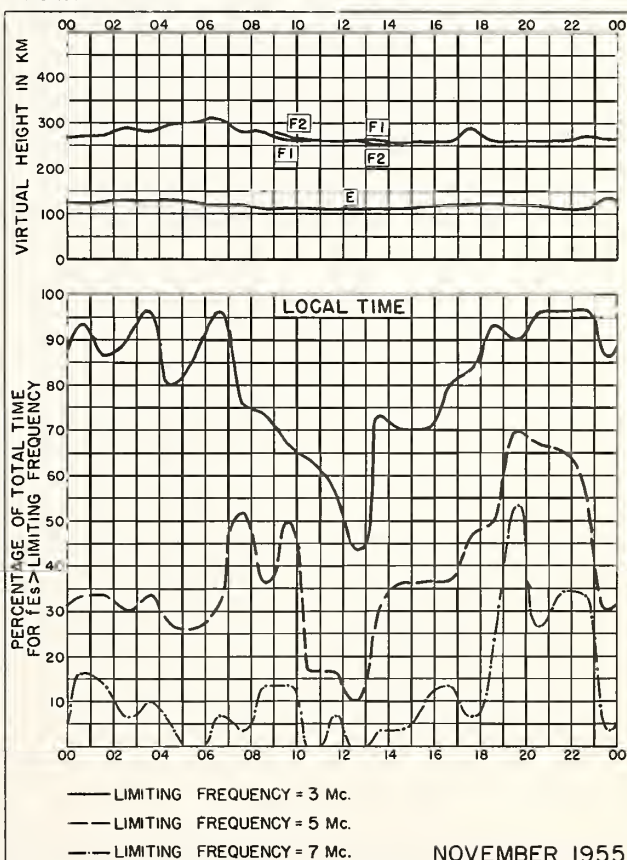
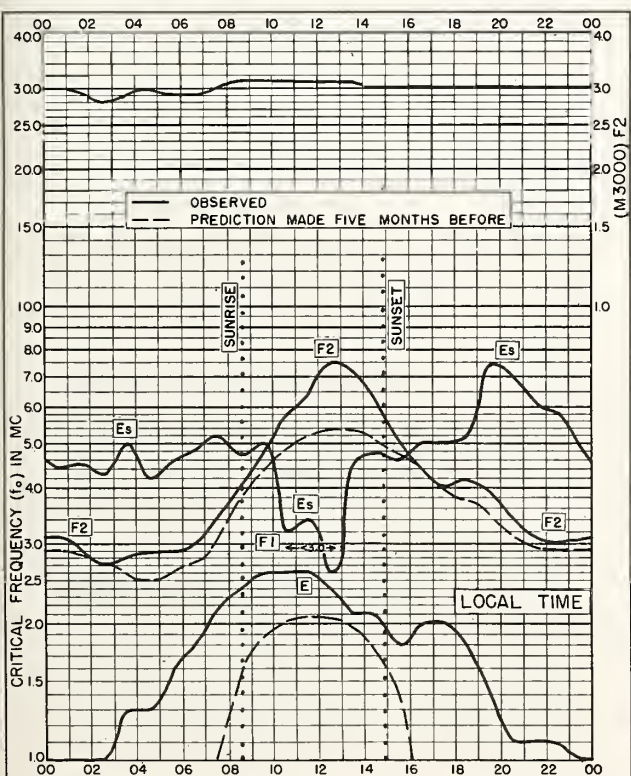
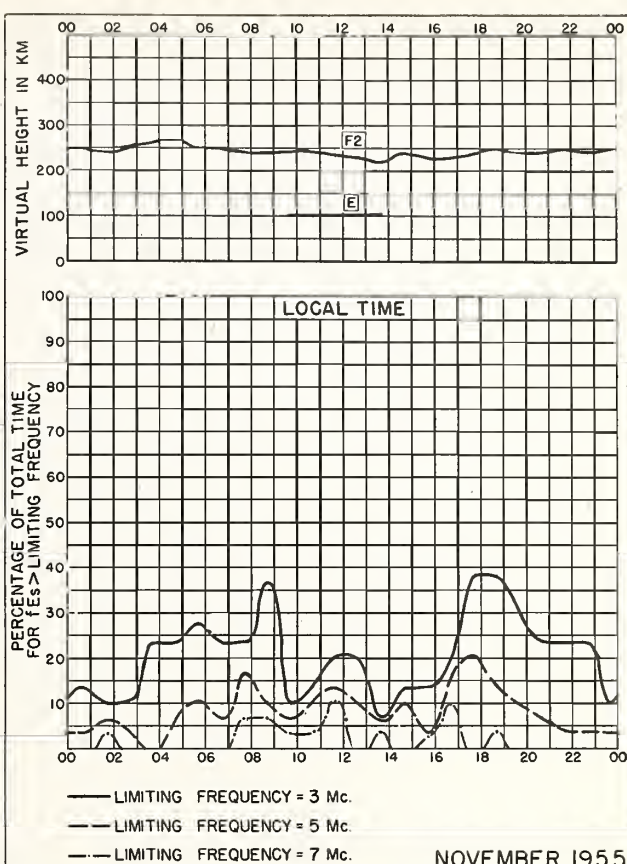
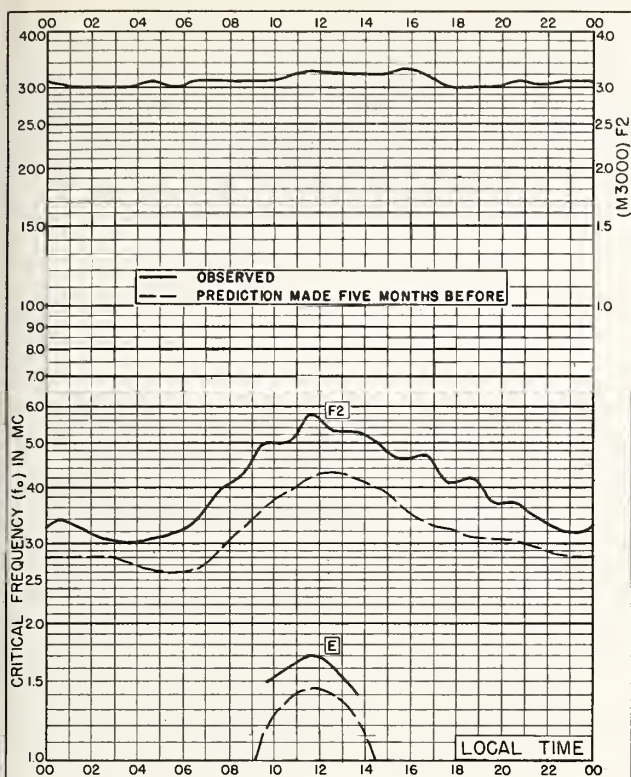


Fig. 76. HUANCAYO, PERU DECEMBER 1955



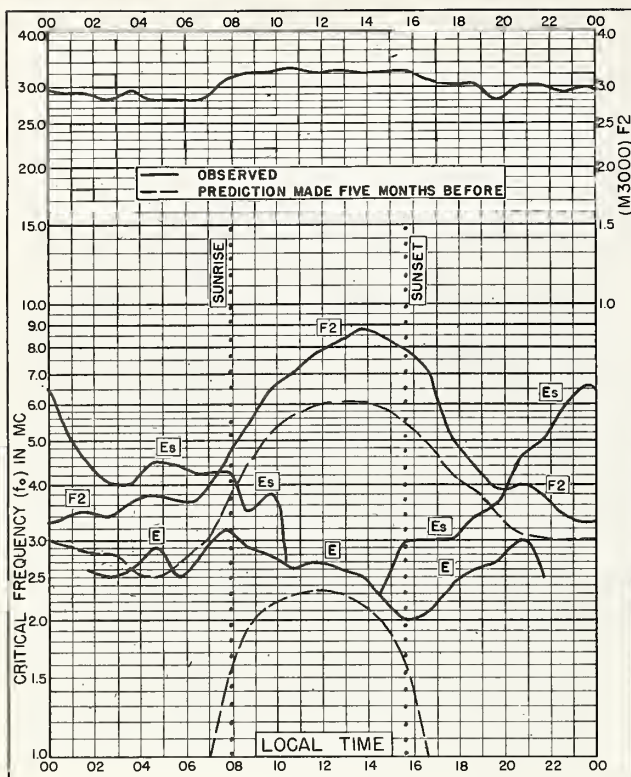


Fig. 81. CHURCHILL, CANADA

58.8°N, 94.2°W

NOVEMBER 1955

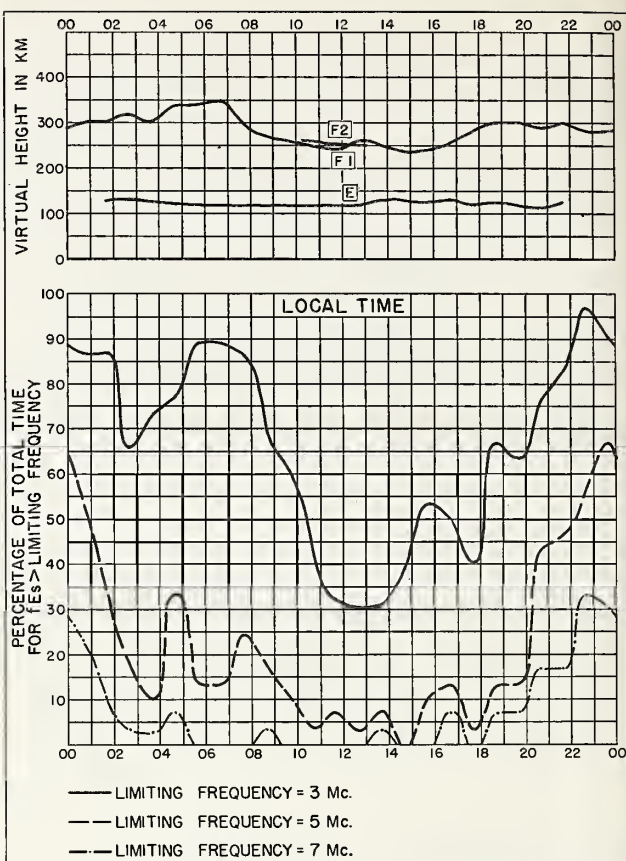


Fig. 82. CHURCHILL, CANADA

NOVEMBER 1955

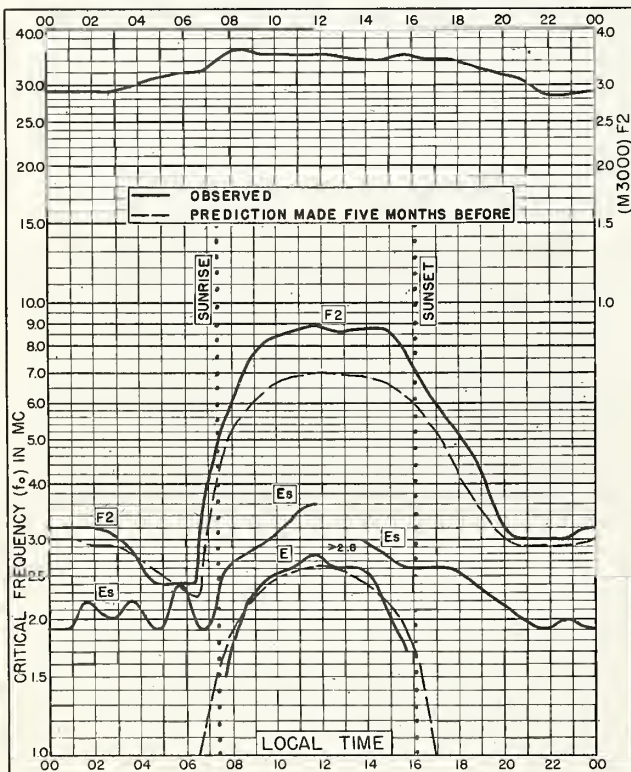


Fig. 83. LINDAU/HARZ, GERMANY

51.6°N, 10.1°E

NOVEMBER 1955

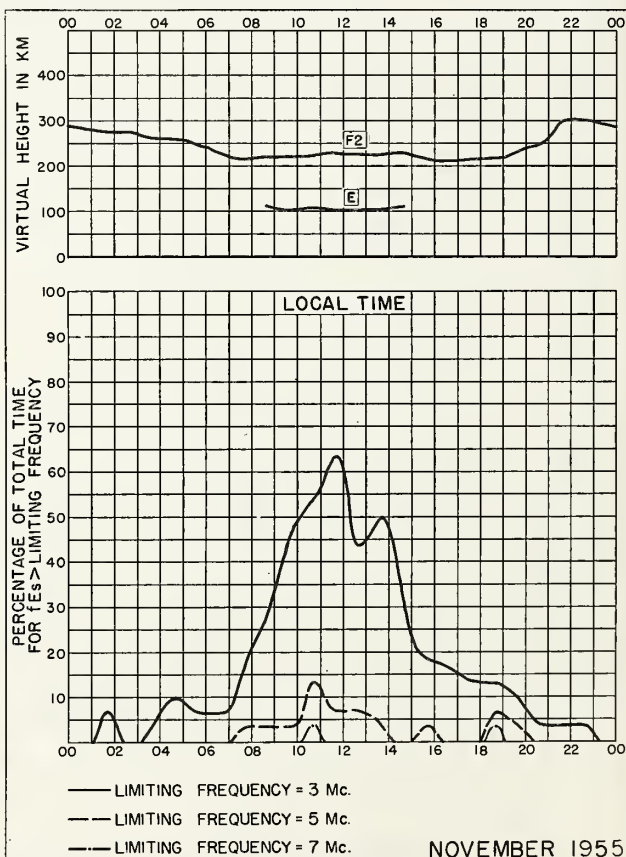


Fig. 84. LINDAU/HARZ, GERMANY

NOVEMBER 1955

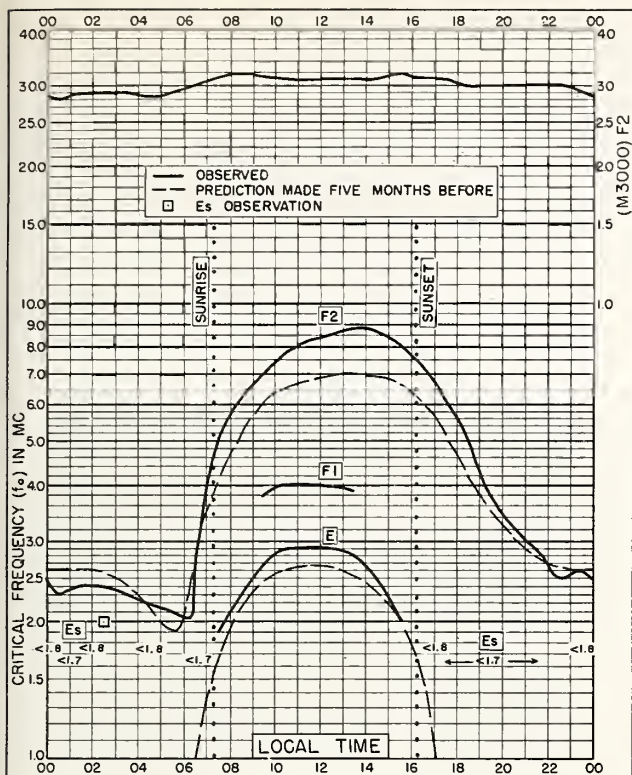


Fig. 85. WINNIPEG, CANADA
49.9°N, 97.4°W NOVEMBER 1955

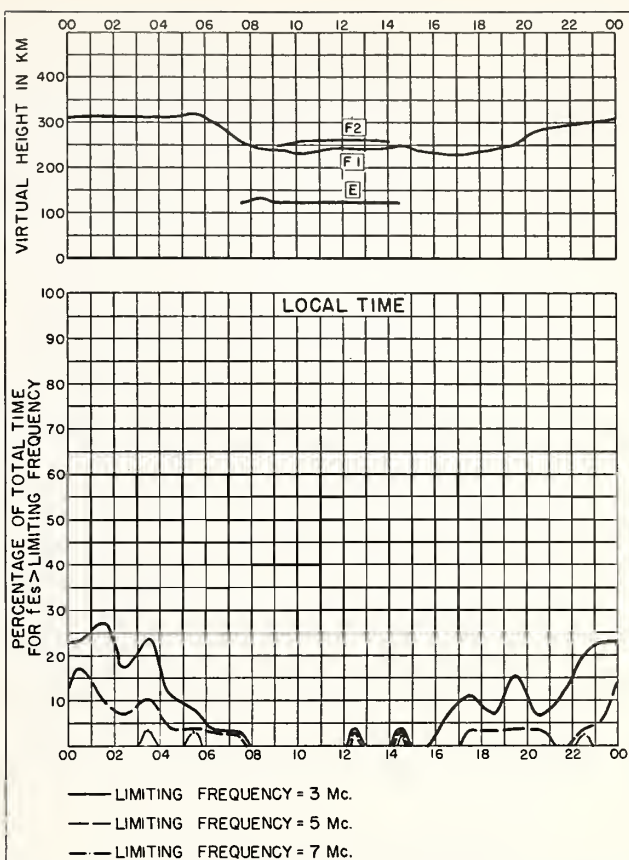


Fig. 86. WINNIPEG, CANADA NOVEMBER 1955

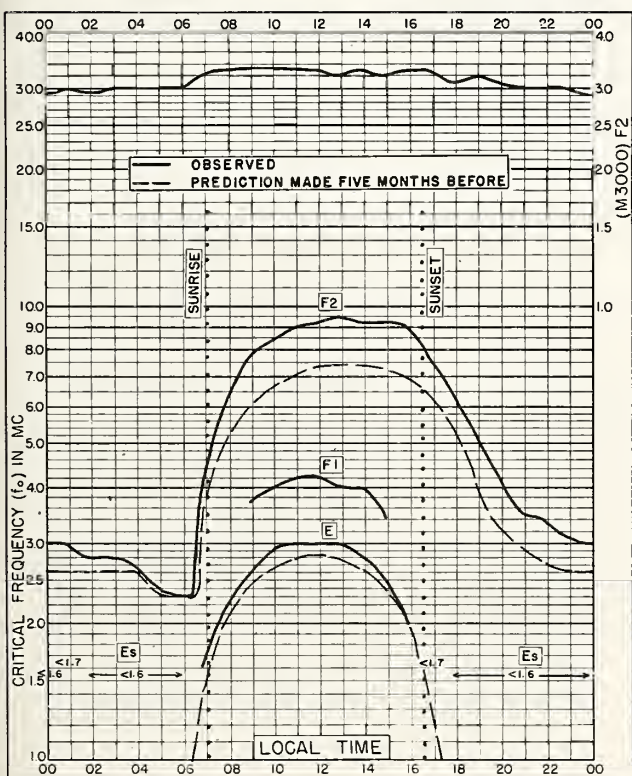


Fig. 87. OTTAWA, CANADA
45.4°N, 75.9°W NOVEMBER 1955

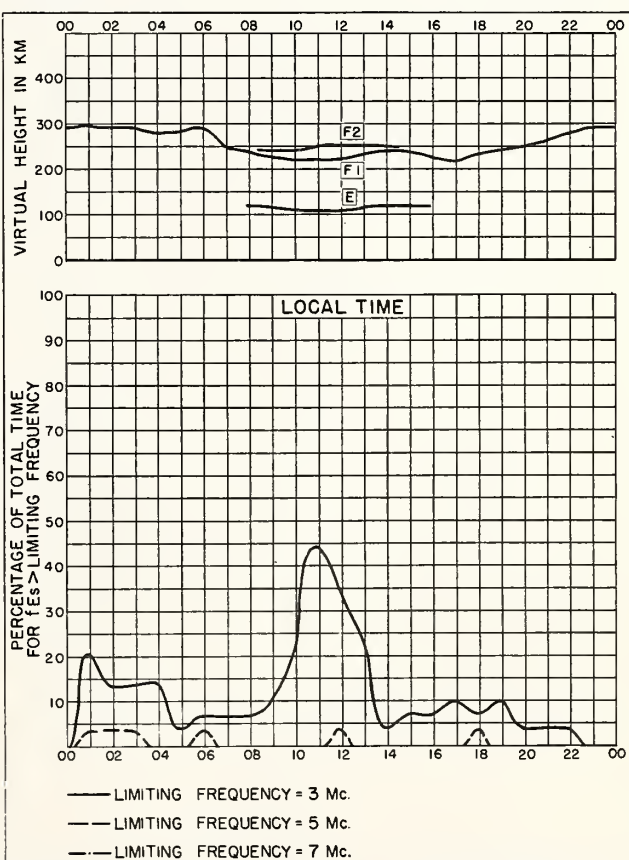


Fig. 88. OTTAWA, CANADA NOVEMBER 1955

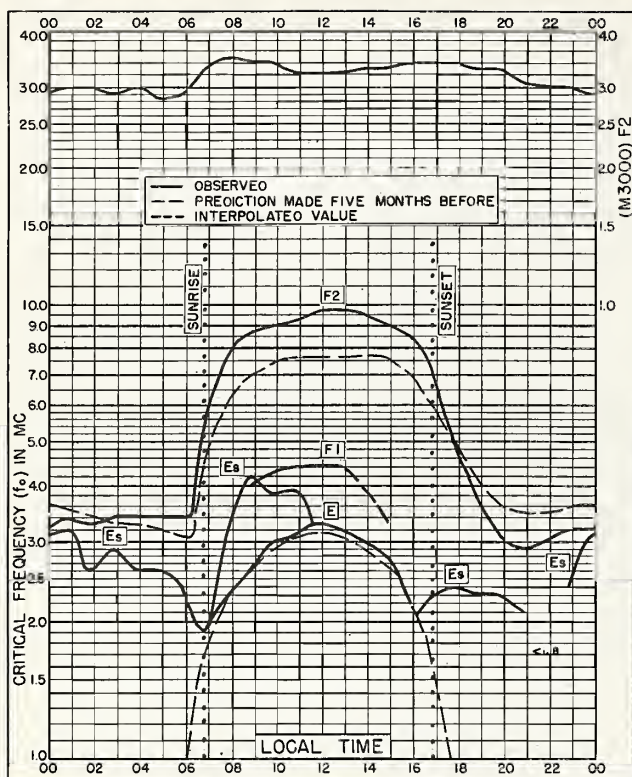


Fig. 89. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W NOVEMBER 1955

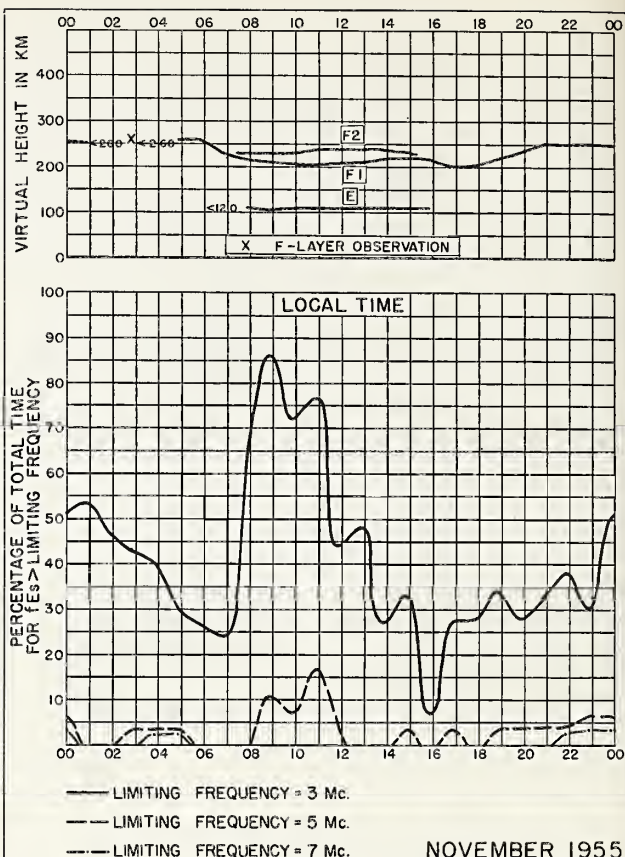


Fig. 90. SAN FRANCISCO, CALIFORNIA

NBS 490

U. S. GOVERNMENT PRINTING OFFICE: 1955

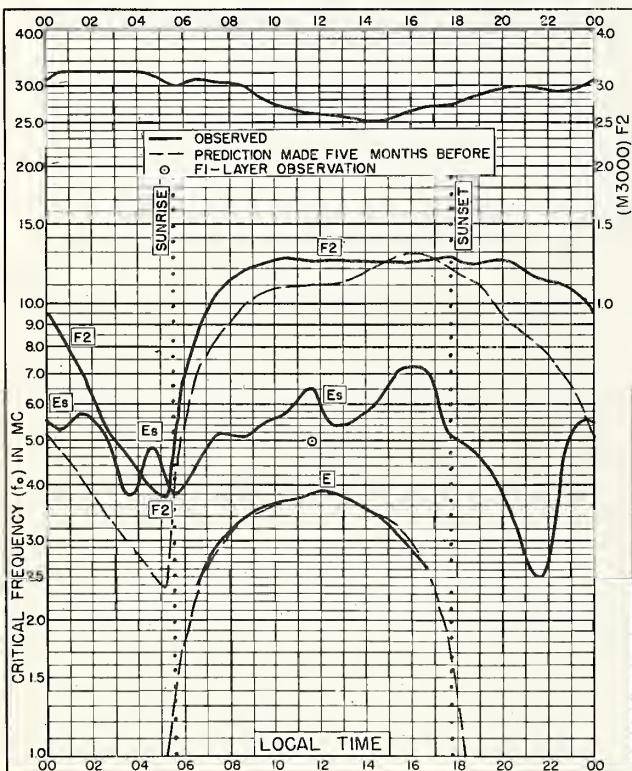


Fig. 91. TALARA, PERU
4.6°S, 81.3°W NOVEMBER 1955

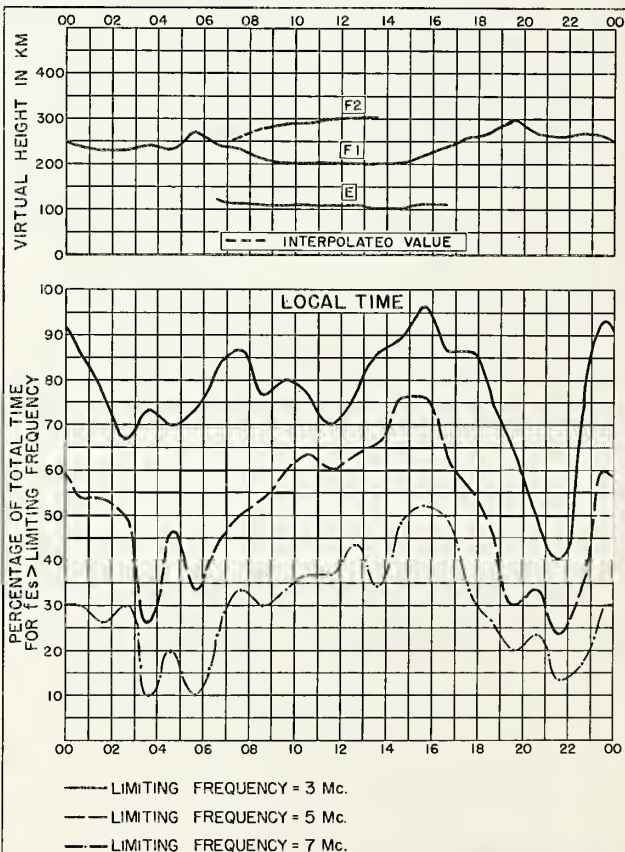


Fig. 92. TALARA, PERU NOVEMBER 1955

NBS 490

U. S. GOVERNMENT PRINTING OFFICE: 1955

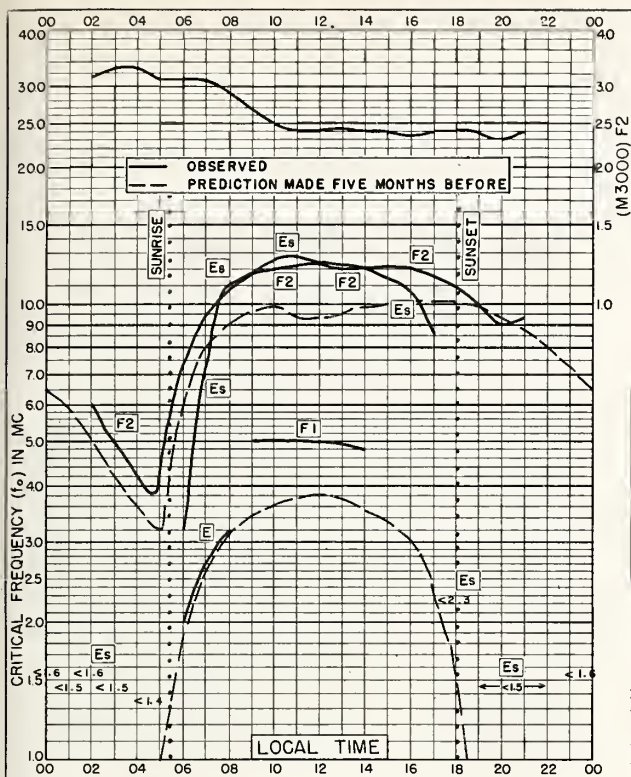


Fig. 93. HUANCAYO, PERU
12.0°S, 75.3°W

NOVEMBER 1955

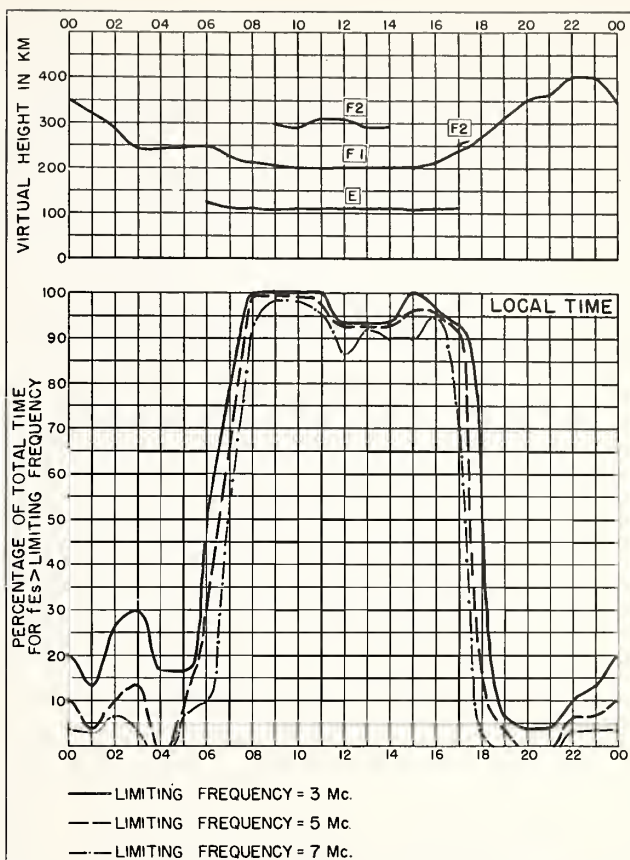


Fig. 94. HUANCAYO, PERU

NOVEMBER 1955

NBS 490

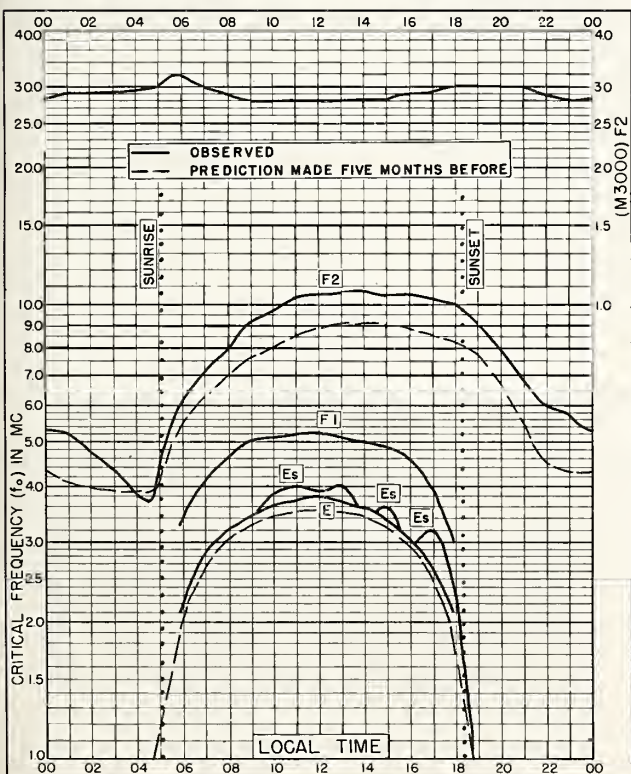


Fig. 95. JOHANNESBURG, UNION OF S. AFRICA
26.2°S, 28.1°E

NOVEMBER 1955

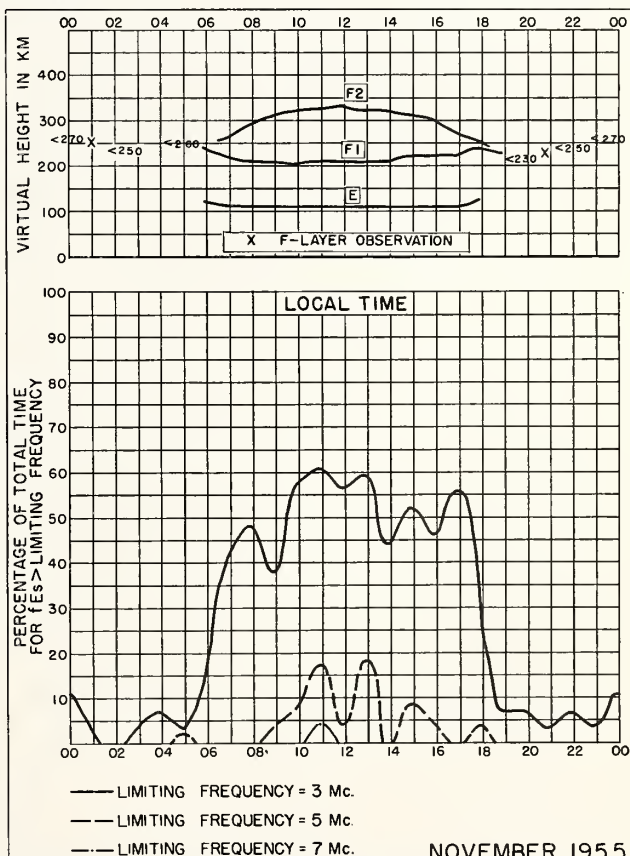


Fig. 96. JOHANNESBURG, UNION OF S. AFRICA

NBS 490

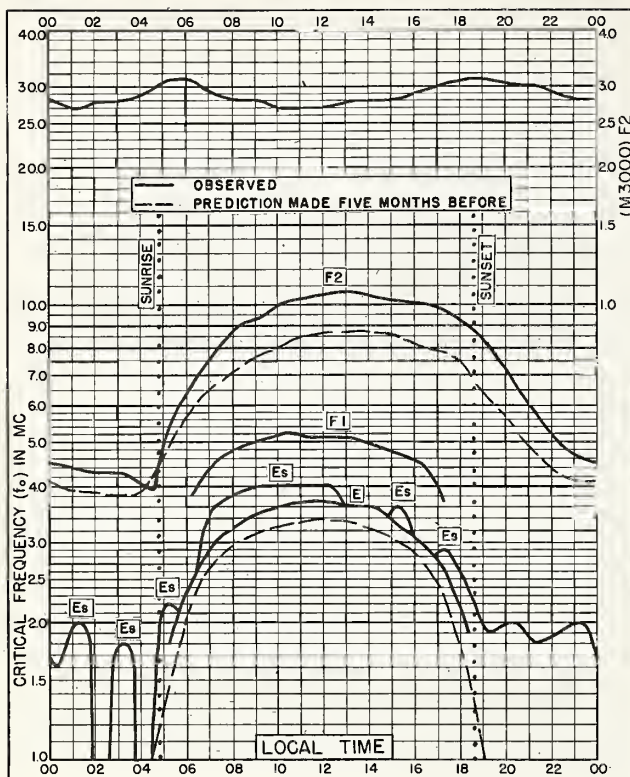


Fig. 97. CAPETOWN, UNION OF S. AFRICA
34.2°S, 18.3°E
NOVEMBER 1955

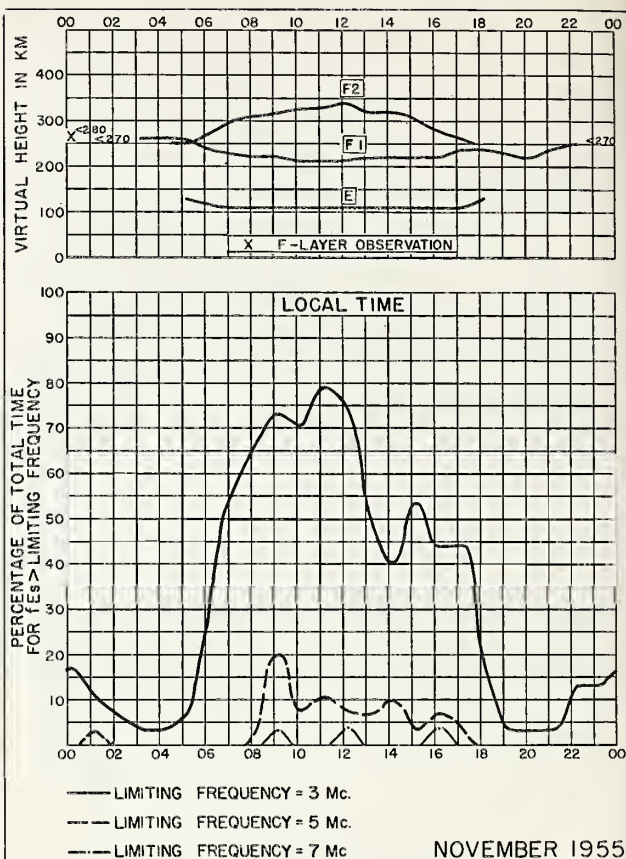


Fig. 98. CAPETOWN, UNION OF S. AFRICA

NBS 490

U. S. GOVERNMENT PRINTING OFFICE: 1957

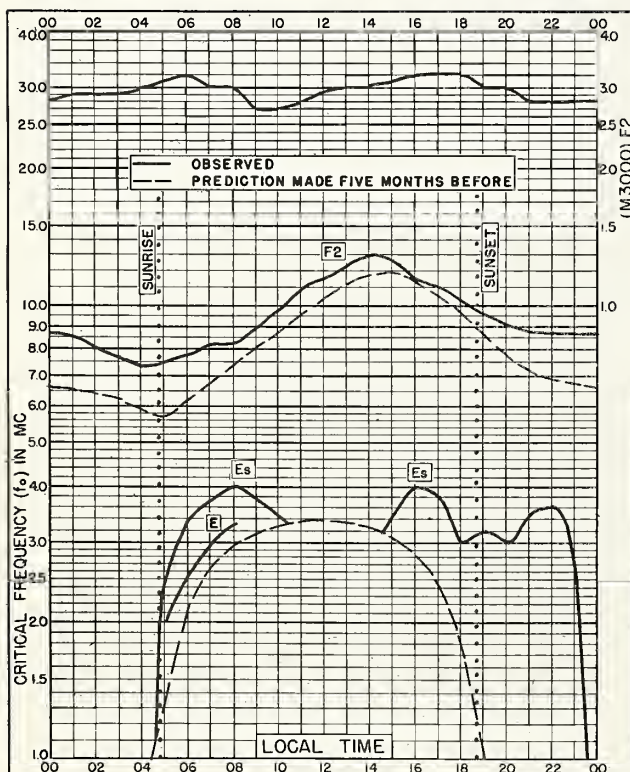


Fig. 99. BUENOS AIRES, ARGENTINA
34.5°S, 58.5°W
NOVEMBER 1955

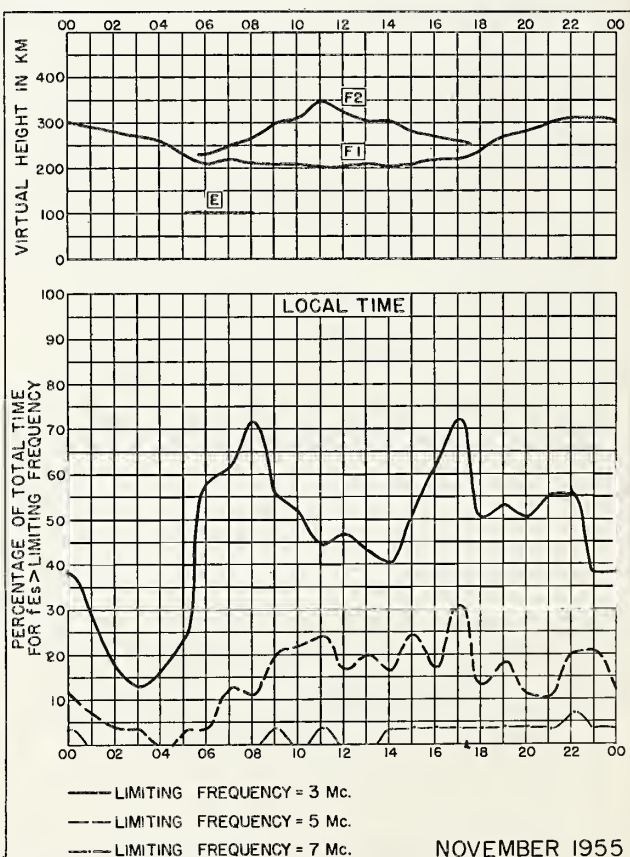


Fig. 100. BUENOS AIRES, ARGENTINA

NBS 490

U. S. GOVERNMENT PRINTING OFFICE: 1957

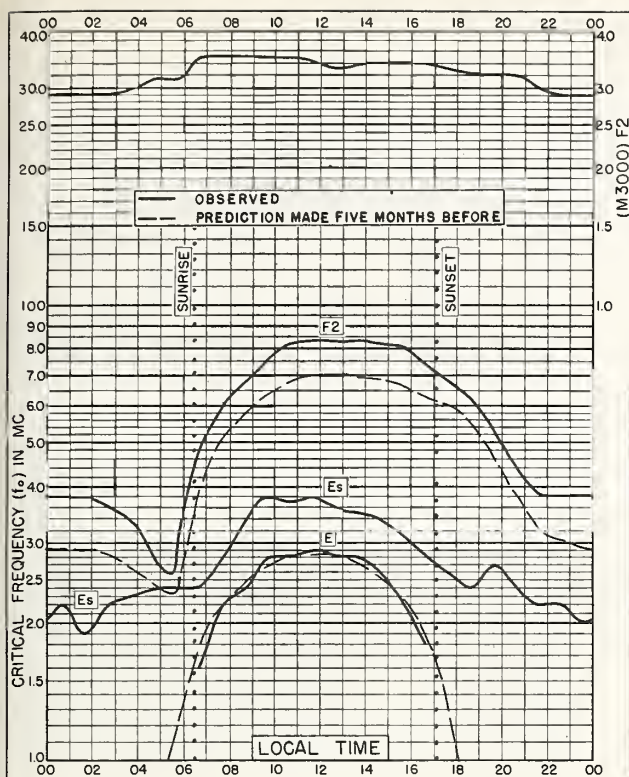


Fig. 101. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E OCTOBER 1955

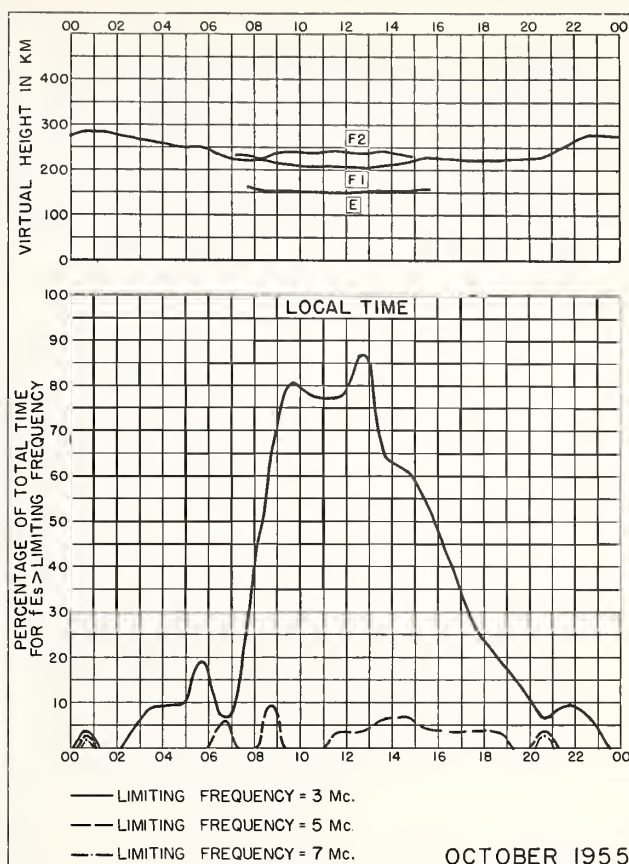


Fig. 102. LINDAU/HARZ, GERMANY
OCTOBER 1955

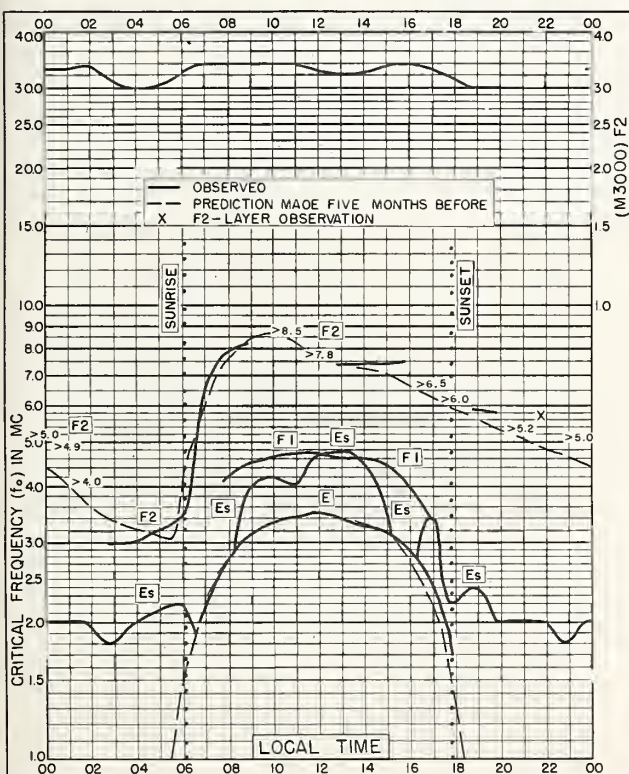


Fig. 103. TOWNSVILLE, AUSTRALIA
19.3°S, 146.7°E SEPTEMBER 1955

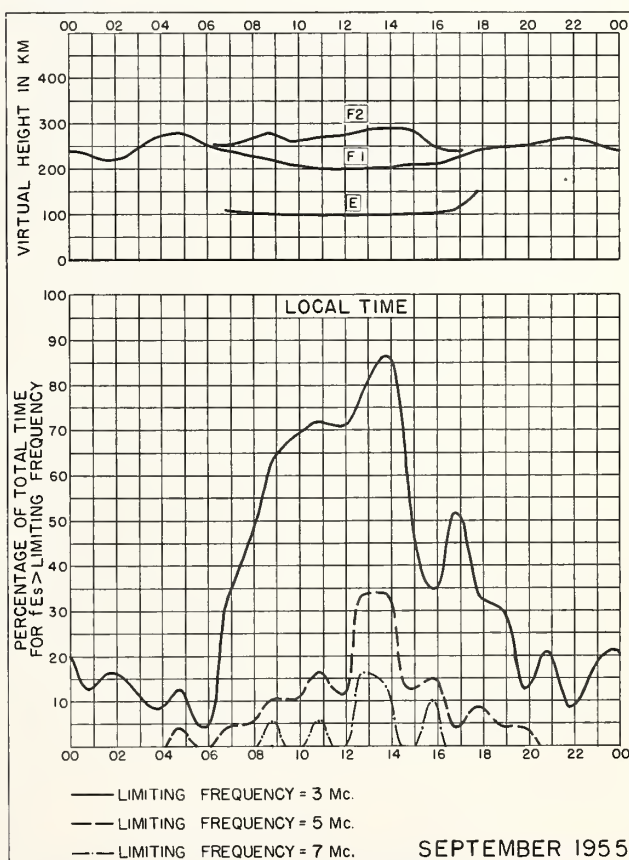


Fig. 104. TOWNSVILLE, AUSTRALIA
SEPTEMBER 1955

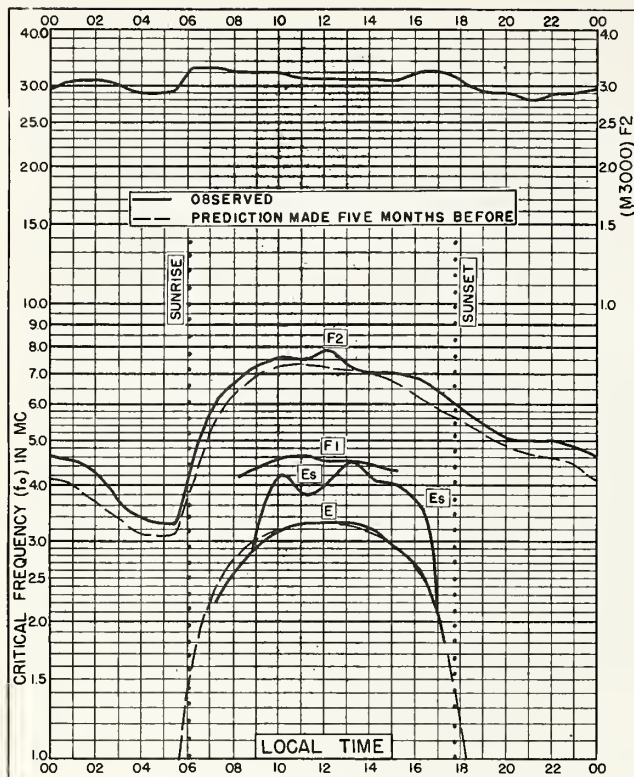


Fig. 105. BRISBANE, AUSTRALIA
27.5°S, 153.0°E SEPTEMBER 1955

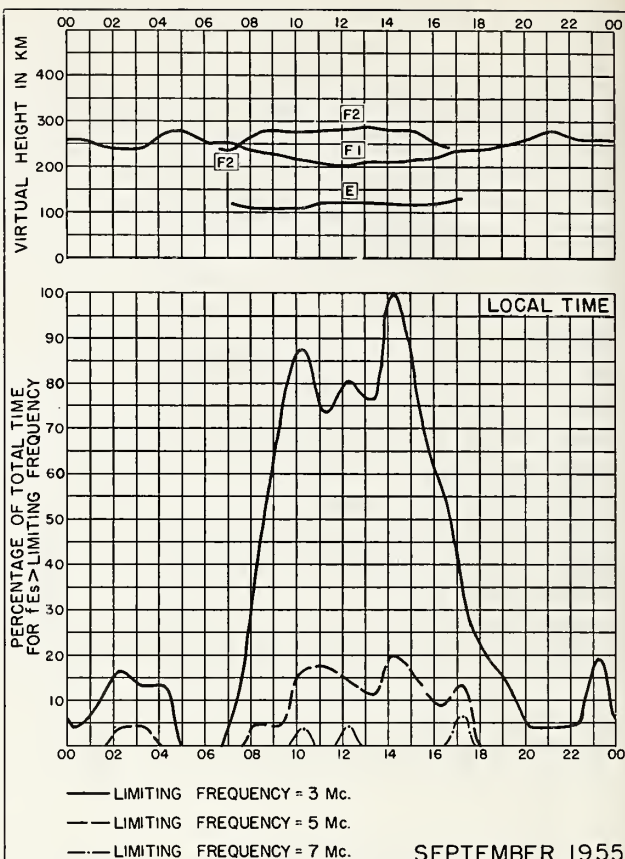


Fig. 106. BRISBANE, AUSTRALIA
SEPTEMBER 1955

NBS 490

U. S. GOVERNMENT PRINTING OFFICE: 1957

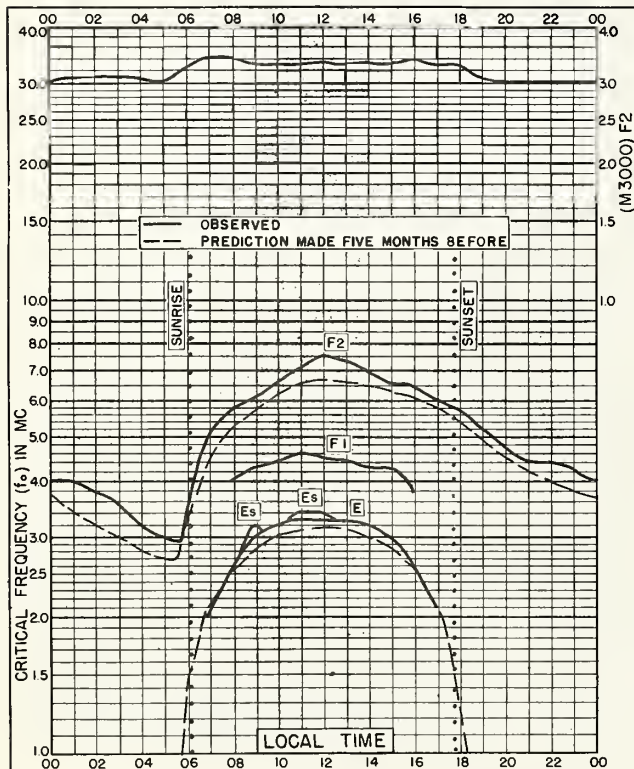


Fig. 107. CANBERRA, AUSTRALIA
35.3°S, 149.0°E SEPTEMBER 1955

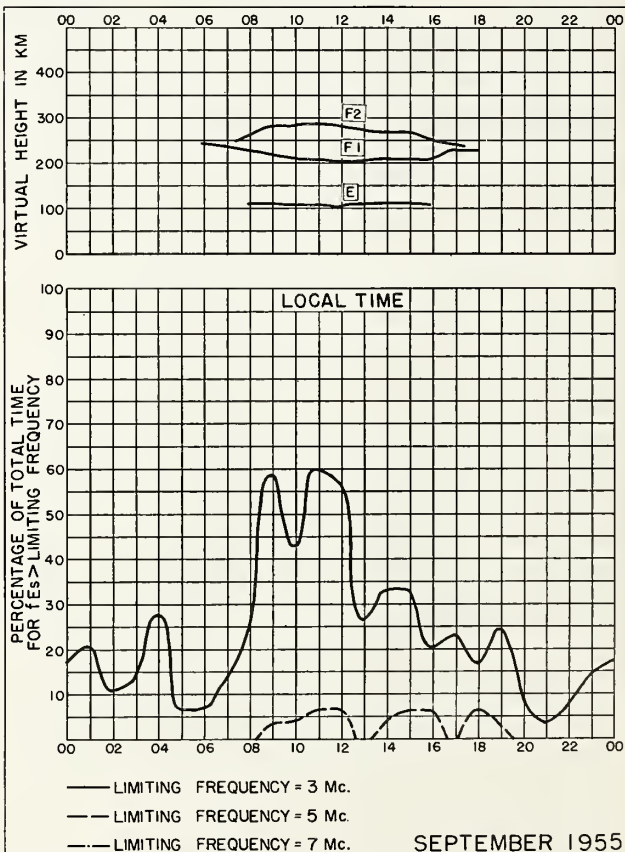


Fig. 108. CANBERRA, AUSTRALIA
SEPTEMBER 1955

NBS 490

U. S. GOVERNMENT PRINTING OFFICE: 1957

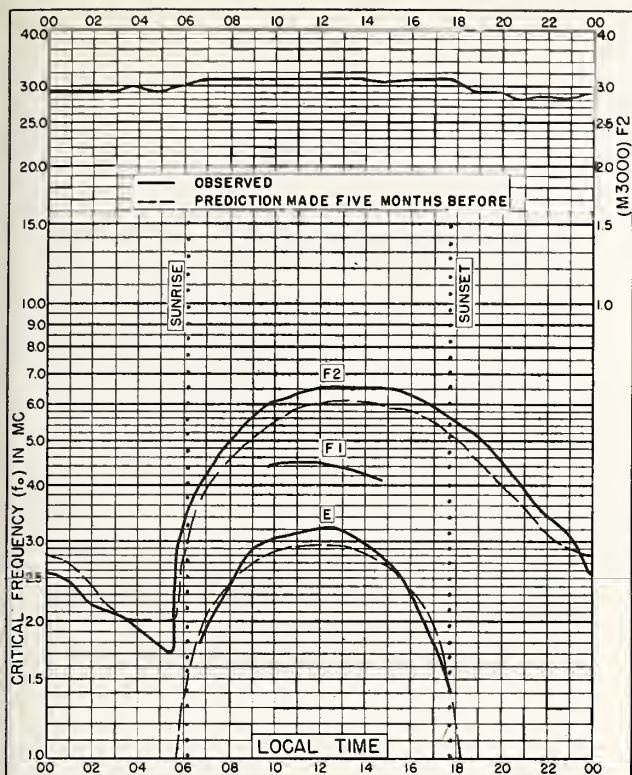


Fig. 109. HOBART, TASMANIA
42.9°S, 147.3°E SEPTEMBER 1955

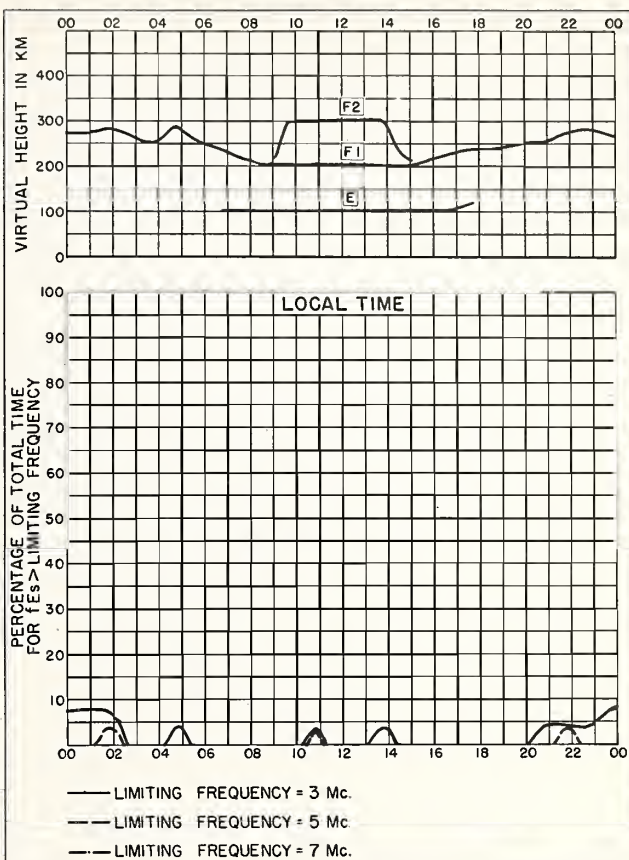


Fig. 110. HOBART, TASMANIA SEPTEMBER 1955

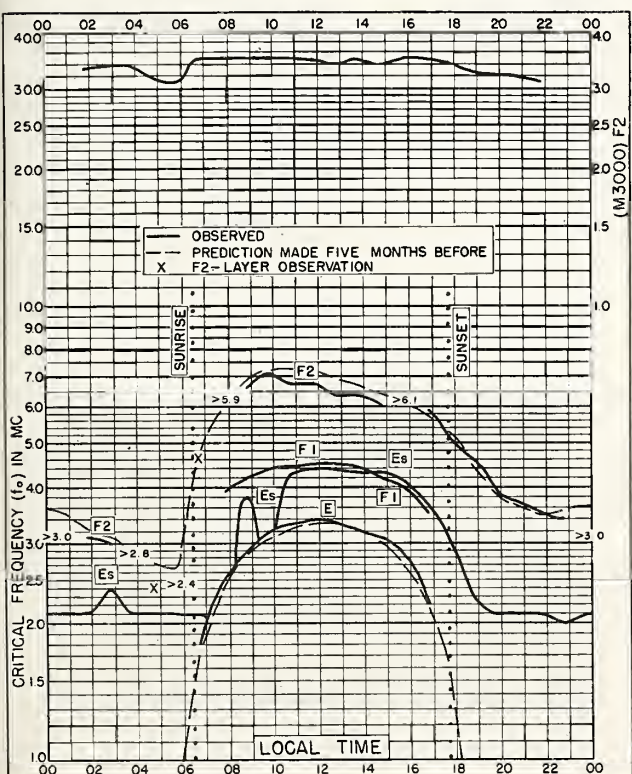


Fig. 111. TOWNSVILLE, AUSTRALIA
19.3°S, 146.7°E AUGUST 1955

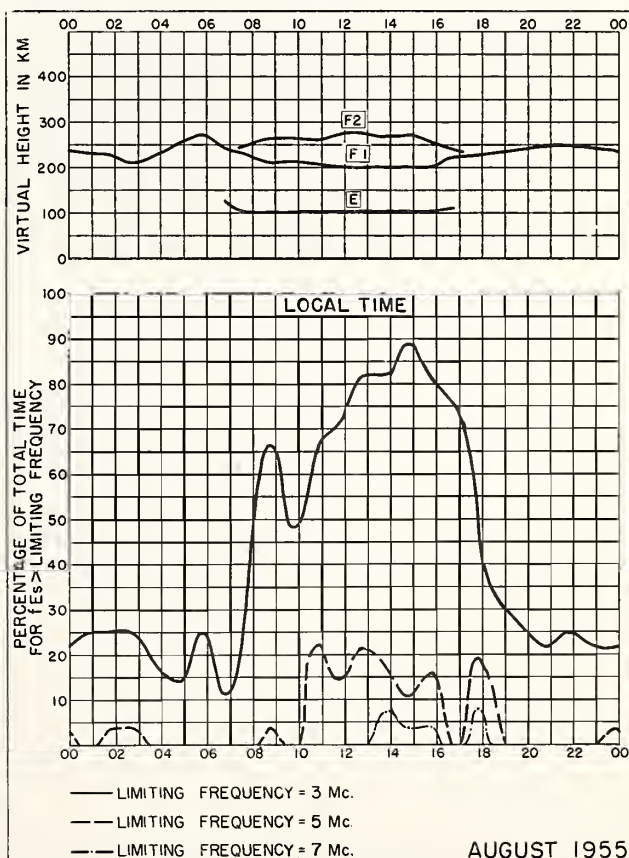


Fig. 112. TOWNSVILLE, AUSTRALIA

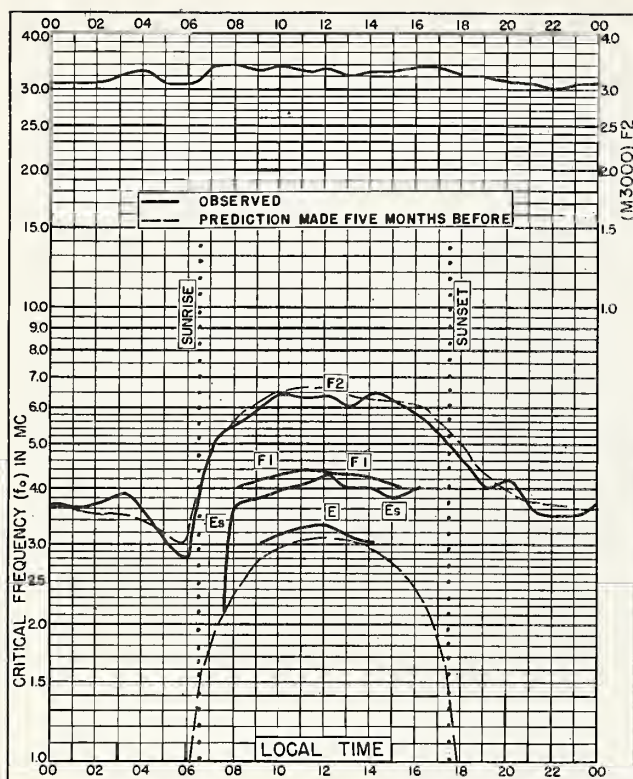


Fig. 113. BRISBANE, AUSTRALIA
27.5°S, 153.0°E AUGUST 1955

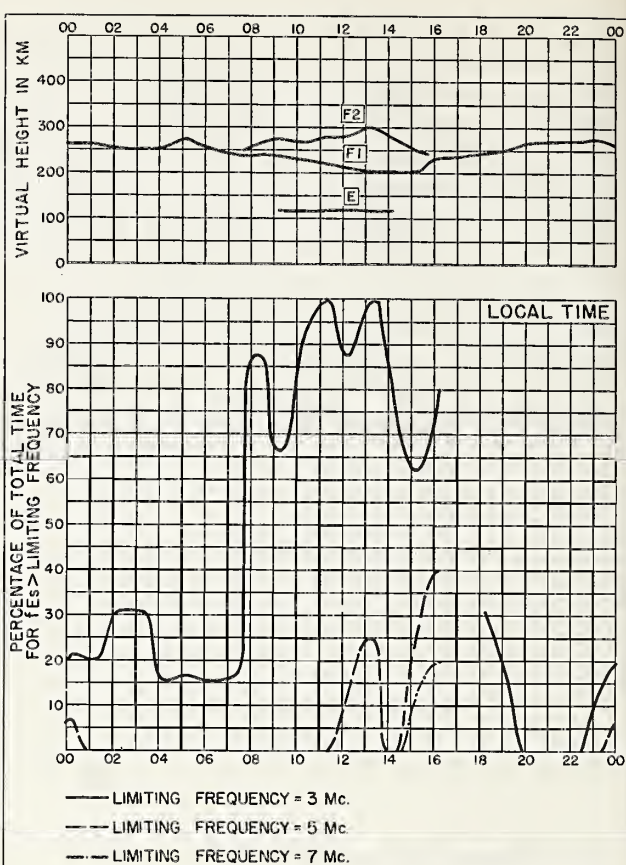


Fig. 114. BRISBANE, AUSTRALIA AUGUST 1955

NBS 490

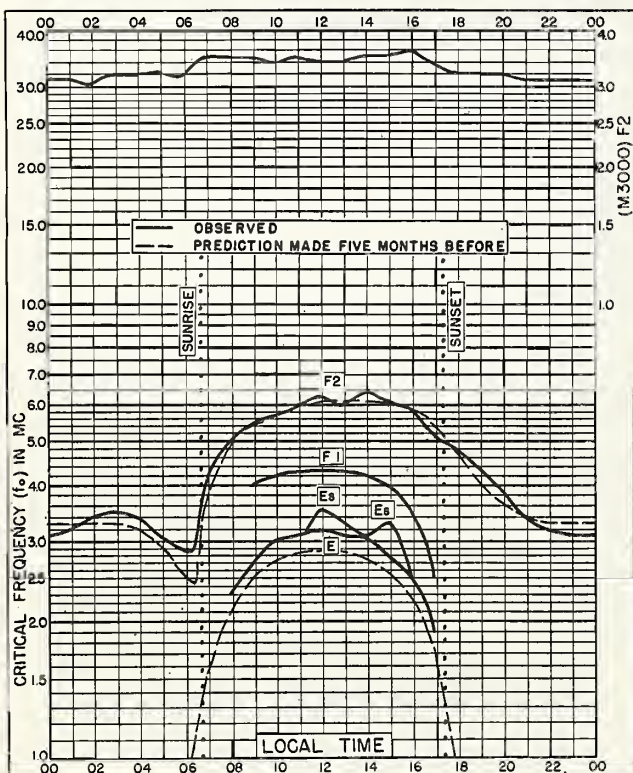


Fig. 115. CANBERRA, AUSTRALIA
35.3°S, 149.0°E AUGUST 1955

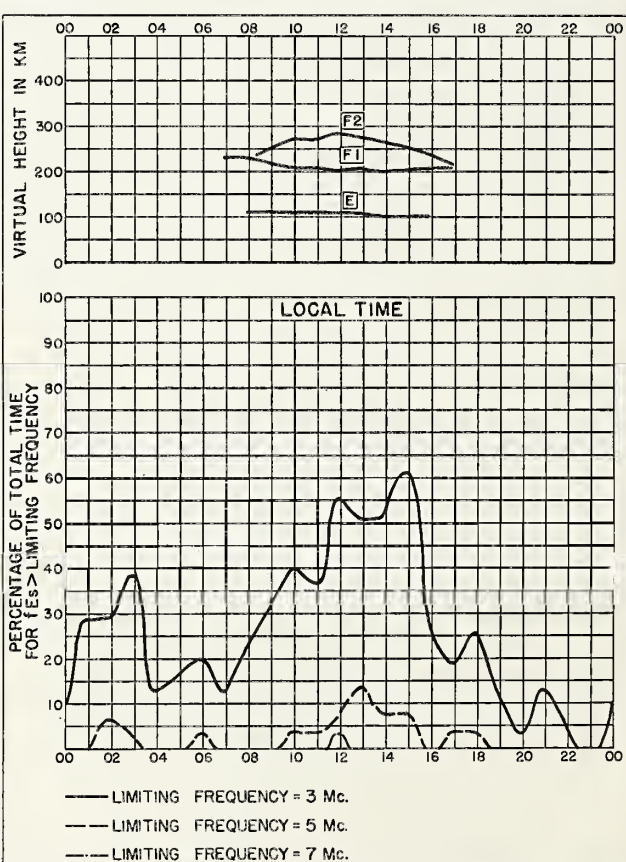


Fig. 116. CANBERRA, AUSTRALIA AUGUST 1955

NBS 490

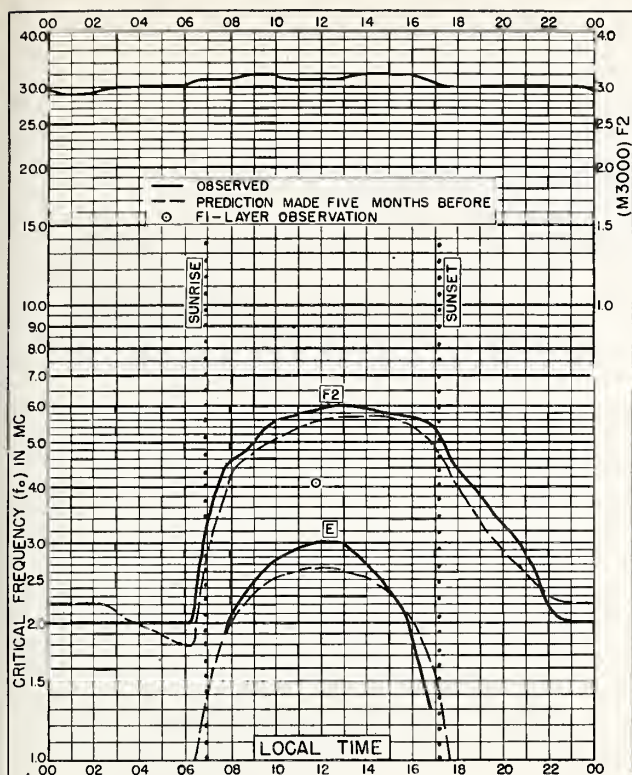


Fig. 117. HOBART, TASMANIA
42.9°S, 147.3°E

AUGUST 1955

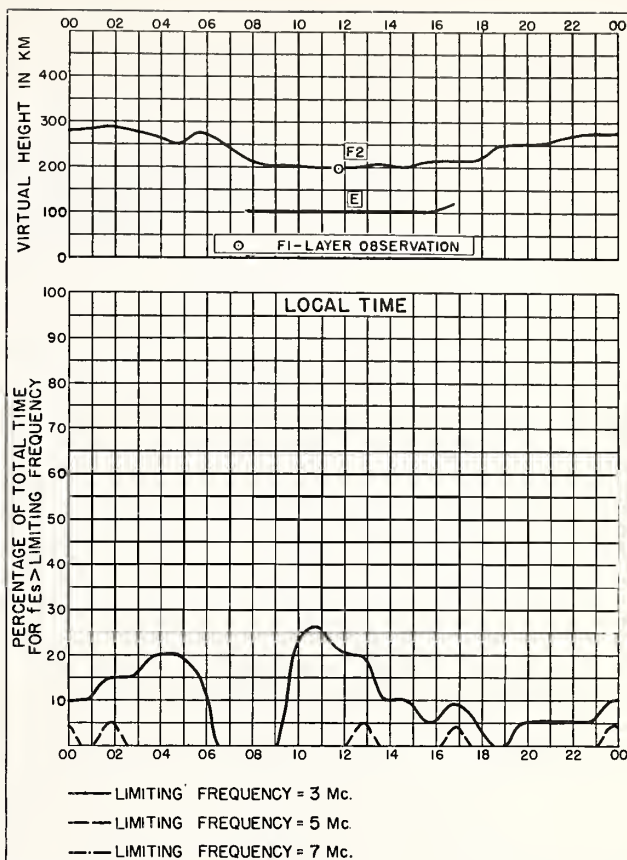


Fig. 118. HOBART, TASMANIA

AUGUST 1955

NBS 490

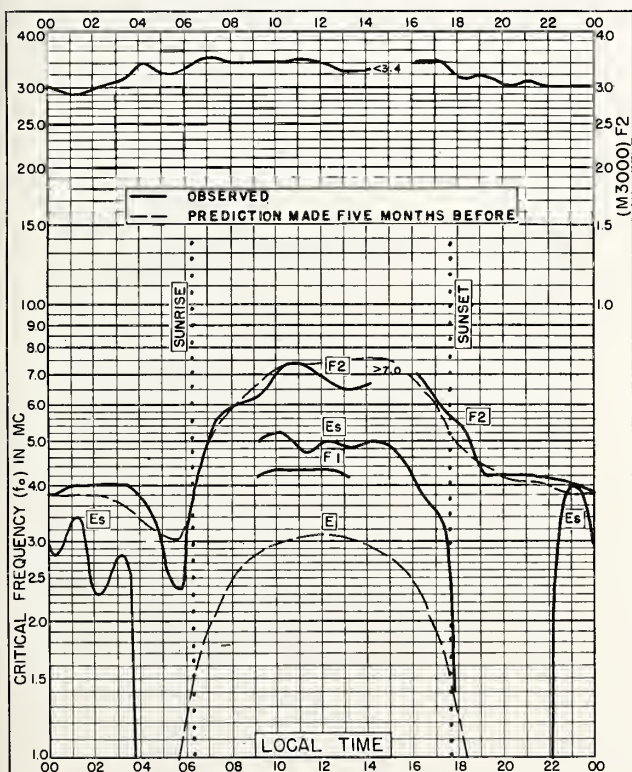


Fig. 119. BRISBANE, AUSTRALIA
27.5°S, 153.0°E

APRIL 1955

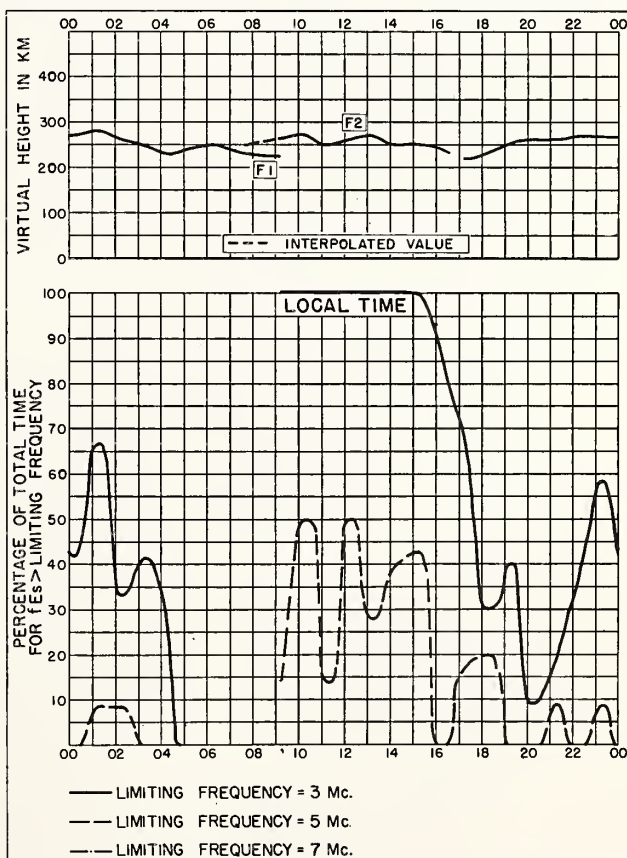


Fig. 120. BRISBANE, AUSTRALIA

APRIL 1955

NBS 490

Index of Tables and Graphs of Ionospheric Data
in CRPL-F140 (Part A)

	<u>Table page</u>	<u>Figure page</u>
Adak, Alaska		
February 1956.	10	33
Baker Lake, Canada		
January 1956	11	38
December 1955.	13	43
November 1955.	15	49
Brisbane, Australia		
September 1955	17	56
August 1955.	18	58
April 1955	18	59
Buenos Aires, Argentina		
November 1955.	17	54
Canberra, Australia		
September 1955	17	56
August 1955.	18	58
Capetown, Union of S. Africa		
November 1955.	17	54
Churchill, Canada		
January 1956	12	39
December 1955.	13	44
November 1955.	15	50
De Bilt, Holland		
January 1956	12	40
Elisabethville, Belgian Congo		
January 1956	13	42
December 1955.	15	48
Fairbanks, Alaska		
February 1956.	9	31
Formosa, China		
February 1956.	10	35
Ft. Monmouth, New Jersey		
February 1956.	10	34
Graz, Austria		
February 1956.	10	33
Guam I.		
February 1956.	11	37
Hobart, Tasmania		
September 1955	18	57
August 1955.	18	59
Huancayo, Peru		
December 1955.	15	48
November 1955.	16	53
Johannesburg, Union of S. Africa		
November 1955.	16	53

Index (CRPL-F140 (Part A), continued)

	<u>Table page</u>	<u>Figure page</u>
Leopoldville, Belgian Congo		
January 1956.	13	42
December 1955	14	47
Lindau/Harz, Germany		
December 1955	14	45
November 1955	15	50
October 1955.	17	55
Maui, Hawaii		
February 1956	11	36
Narsarsuak, Greenland		
February 1956	9	31
Okinawa I.		
February 1956	10	35
Oslo, Norway		
February 1956	9	32
Ottawa, Canada		
January 1956.	12	41
December 1955	14	46
November 1955	16	51
Panama Canal Zone		
February 1956	11	37
Puerto Rico, W. I.		
February 1956	11	36
Resolute Bay, Canada		
January 1956.	11	38
December 1955	13	43
November 1955	15	49
Reykjavik, Iceland		
January 1956.	12	39
December 1955	13	44
San Francisco, California		
November 1955	16	52
Schwarzenburg, Switzerland		
January 1956.	12	41
Talara, Peru		
December 1955	14	47
November 1955	16	52
Townsville, Australia		
September 1955.	17	55
August 1955	18	57
Tromso, Norway		
February 1956	9	30
Upsala, Sweden		
February 1956	9	32

Index (CRPL-F140 (Part A), concluded)

	<u>Table page</u>	<u>Figure page</u>
Washington, D. C.		
March 1956.	9	30
White Sands, New Mexico		
February 1956	10	34
December 1955	14	46
Winnipeg, Canada		
January 1956	12	40
December 1955	14	45
November 1955	16	51

CRPL Reports

[A detailed list of CRPL publications is available from the Central Radio Propagation Laboratory upon request]

Daily:

Radio disturbance forecasts, every half hour from broadcast stations WWV and WWVH of the National Bureau of Standards.

Telephoned and telegraphed reports of ionospheric, solar, geomagnetic, and radio propagation data.

Semiweekly:

CRPL—J. North Atlantic Radio Propagation Forecast (of days most likely to be disturbed during following month).

CRPL—Jp. North Pacific Radio Propagation Forecast (of days most likely to be disturbed during following month).

Semimonthly:

CRPL—Ja. Semimonthly Frequency Revision Factors For CRPL Basic Radio Propagation Prediction Reports.

Monthly:

CRPL—D. Basic Radio Propagation Predictions—Three months in advance. (Dept. of the Army, TB 11—499—, monthly supplements to TM 11—499; Dept. of the Navy, DNC 13 () series; Dept. of the Air Force, TO 31—3—28 series). On sale by Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Members of the Armed Forces should address cognizant military office.

CRPL—F. (Part A). Ionospheric Data.

(Part B). Solar-Geophysical Data.

Limited distribution. These publications are in general disseminated only to those individuals or scientific organizations which collaborate in the exchange of ionospheric, solar, geomagnetic or other radio propagation data or in exchange for copies of publications on radio, physics, and geophysics for the CRPL library.

Circulars of the National Bureau of Standards pertaining to Radio Sky Wave Transmission:

NBS Circular 462. Ionospheric Radio Propagation.

NBS Circular 465. Instructions for the Use of Basic Radio Propagation Predictions.

NBS Circular 557. Worldwide Radio Noise Levels Expected in the Frequency Band 10 Kilocycles to 100 Megacycles.

These circulars are on sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Members of the Armed Forces should address the respective military office having cognizance of radio wave propagation.

The publication listed above may be obtained without charge from the Central Radio Propagation Laboratory, unless otherwise indicated.
